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PUBLISHER'S NOTE.

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AUTOMATISM AND EVOLUTION.

BY CHARLES FLAM, M.D.

THE eloquent and learned address delivered by Professor Tyndall at Belfast, in the autumn of 1874, followed by what was termed the "brilliant vindication" of Professor Huxley, may be considered to mark an epoch in philosophical thought, as being a full, formal, and public recognition of the doctrine of EVOLUTION carried out to its logical conclusion. This conclusion is precise and intelligible, and may be summed up in two short propositions, the second being the natural and inevitable corollary of the first—

1. MATTER IS ALL-POWERFUL AND ALL-SUFFICIENT.

2. MAN IS ONLY A SENTIENT AUTOMATON.

The enunciation of doctrines such as these, on such authority, and before such an assembly, could not fail to cause great

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excitement, both amongst the few who think for themselves, and the many who allow others to think for them, and to form their opinions. And whilst they were received at the time with "whirlwinds of applause," and have since been upheld with enthusiasm, as being the "death-knell of superstition," and the signal for the "emancipation of thought," there have not been wanting earnest and enlightened seekers after truth wherever it was to be found, who have not only refused to accept this *teaching* and its "logical consequences," but have been unable to see in it anything more than a flimsy framework of hypothesis, constructed upon imaginary or irrelevant facts, with a complete departure from every established canon of scientific investigation.

The enthusiasm on the one hand, and

the opposition on the other, are sufficiently comprehensible. It is less easy to understand the indignation, the dislike, and the apprehension with which these utterances have been received. Nothing can be more certain than that every man has a perfect right, moral and social, as well as legal, to express before a scientific assembly any opinion that he may hold in science or philosophy. It is, therefore, worse than unmeaning to complain, as certain critics have done, that Professor Tyndall has "abused his position as President of the Association" in enunciating views "subversive of religion and morality" as understood by them.

Still more misplaced and illogical is the alarm that has been felt, and expressed in no measured terms, as to the consequences of these doctrines. Two simple reflections might at once set at rest all these apprehensions. The first is the self-evident consideration that *one truth can never contradict or be opposed to another*, to whatever department of knowledge or belief they may respectively belong. The second is, that statements made, and opinions expressed, on the personal authority only of men of great scientific eminence, are not necessarily scientific truths. The first duty of all thinking men, before expressing adhesion, attempting compromise, or manifesting alarm, is to inquire, "Are these doctrines true?" If they prove after proper investigation to be so, we may certainly leave the consequences to take care of themselves, feeling well assured that they will disturb no other truth in any domain of thought. But in this investigation no amount of mere assertion or authority must be allowed to rank as demonstration or proof.

Professor Huxley, in concluding his very able address, dwells some little time upon the "logical consequences" of this doctrine, but suggests that any inquiry into these matters should be carried out, irrespective of these. He says—

"The logical consequences are very important, but in the course of my experience, I have found that they were the scarecrows of fools, and the beacons of wise men. Logical consequences can take care of themselves. The only question for any man to ask is this: 'Is this doctrine true or is it false?' No other question can be taken into consideration until that is settled. And as I have said, the logi-

cal consequences of doctrines can only serve as a warning to wise men to ponder well whether the doctrine be true or not, and to test it in every possible direction."

This is a fair challenge, and the issue is simple and direct. *Is this doctrine true?* Not who has said it, or what great authorities have upheld it, or under what overwhelming prestige it has been advanced, or what adventitious support it has received from personal or other sources. Nor, on the other hand, is it the question, "Is *any other* doctrine, theory, or tradition true or false?" Every other question it is proposed to set aside for the time being, and to inquire solely, "Is the doctrine of Evolution (of which Human Automatism is the logical outcome) true?"

Perhaps, however, there may be an inquiry worth pursuing for a brief space even before this which concerns the *truth* of the doctrines. We may ask, "Do the sponsors for these statements really mean what their words seem to imply? or are they like children playing in the dark, of whom the bolder and more adventurous take pleasure in practising upon the fears of their weaker companions?"

Professor Tyndall discerns in matter "the promise and potency of all terrestrial life." But does he really mean this? It would not have been very surprising if, with his devotion to, and perhaps unrivalled facility for, physical investigation, he had lost sight of another order of phenomena, which cannot be interpreted in terms of matter. But this is not the case. In his essay on "Scientific Materialism" * he distinctly recognizes in the fact of consciousness *another* class of phenomena, the connection of which with physics is *unthinkable*, and speaks in set terms of "*two classes of phenomena*" the "chasm between" which must ever "remain intellectually impassable." This reduces the omnipotence of matter to a very innocent cry of "Wolf."

It is, doubtless, possible to *assert* that the "two classes of phenomena" are equally due to matter, although the causative connection between them cannot be traced, or even *thought*; but such assertion must necessarily lack all scientific value. And indeed, if made, it would be answered by the author himself, far more

* Fragments of Science, p. 121.

completely than I could hope to answer it. No longer ago than November, 1875 (see *Fortnightly Review*, p. 585), Professor Tyndall quotes and adopts the words of Du Bois Raymond, to the effect that "it is absolutely and for ever inconceivable that a number of carbon, hydrogen, nitrogen, and oxygen atoms, should be otherwise than indifferent as to their own position and motion, past, present, or future;" and adds, in his own words, that "the continuity between molecular processes and the phenomena of consciousness . . . is a rock on which materialism must inevitably split whenever it pretends to be a complete philosophy of the human mind."

In the same essay (p. 595) the author intimates that if our "capacities" were "indefinitely multiplied," he could imagine that we should observe "not only the vegetable, but the mineral world responsive to the proper irritants;" in other words, we should find that mere elementary matter is endowed with the attribute of consciousness or sensation. Referring to this, it was recently well and tersely observed by Mr. Martineau, that "you will get out of your atoms by Evolution exactly so much, and no more, as you have put into them by hypothesis." I may add that on the same principle we might make any number of baseless assertions on any scientific subject whatever, and defend their obvious inaccuracy on the grounds of the imperfection of our senses, or of our instruments of research.

Professor Tyndall again refers (see "Scientific Materialism," p. 419) to "the relation of physics to consciousness" as being "invariable." I have no doubt the writer firmly believes in this assumption; and its assertion on such high authority will weigh powerfully with many; yet it needs no profound acquaintance with modern physiology and pathology to convince us that no such "invariable relation" can be verified; that in fact, it does not exist.

Comparing these various utterances we cannot but see that "the promise and potency" of life and mind which Professor Tyndall discerns in matter must be understood with many limitations; and that he himself most carefully guards us against attaching to these words a literal significance.

It has, however, been asserted, as supporting this proposition, that "naturalists prove that there are no other forces in nature beside the physical, chemical, and mechanical,"* and that therefore all the phenomena of life and mind must be due to them; although "as to the *how*, it must be confessed that our knowledge is but scanty." The latter clause of the sentence is perfectly true; the former stands closely related to most of the assertions on which the modern doctrine of Evolution is built. That some naturalists and (so-called) philosophers assert this, with marvellous monotony and perseverance, is true enough; that they *prove* it, that they even make the most distant approach to proving it, is altogether opposed to the truth. I hope at some future time to enter more fully into this subject; at present I content myself with affirming it to be demonstrable that whatever evidence we may be able to adduce for the existence of matter and physical forces there is corresponding evidence at least as strong (I think *much* stronger), for the existence of something, *certainly not material*, in any ordinary or legitimate acceptance of the term, which is antagonistic to matter in its activities, and which we are accustomed to call mind.

Professor Huxley defines man as being "a conscious automaton;" but, perhaps, lest the assertion should be too strong food for his weaker brethren, he qualifies it immediately by saying that the automaton is "endowed with free will, in the only intelligible sense of that much-abused term; inasmuch as in many respects we are able to do as we like."†

An "automaton endowed with free will" is certainly a pleasing and interesting novelty in physical science; and Mr. Huxley deserves great credit for his ingenious invention. It would have been an intellectual treat to listen to him replying to any unfortunate opponent who had committed himself so profoundly. Meanwhile his proposition, taken as a whole, is simply suicidal; for as no one, to my knowledge, ever considered *free will* to signify anything else but the power to do as we like, the definition of man as being an "automaton endowed

* Büchner's Force and Matter. Preface, p. xxvii.

† *Fortnightly Review*, Nov. 1874, p. 577.

with free will" leaves him exactly where it found him; that is, as an intelligent free agent.

In entering formally upon the proposed inquiry, are these doctrines true? it will clear the way to ask first what support they receive (1) from comparative analogies, and (2) from what has been called "the aggregate common sense" of mankind.

1. It is not easy to find any satisfactory illustration or analogy from comparative anatomy or physiology. Professor Huxley adduces the case of the frog, which can stand, balance itself, jump, avoid obstacles, and perform a variety of acts simulating volition, when all connection between the brain (the centre of volition) and the limbs is severed. The facts are interesting; they are also well known and indisputable; but the inferences from them are hasty and altogether unwarranted. It can by no means follow, that because *certain* acts of some animals *may be* automatic, *all* their acts *are* so.

But even supposing, for the sake of the argument, that this had been proved, that all the motions of a frog in the normal state were automatic, and might, in fact, be performed as well without as with a brain; the question would naturally arise, How far will these experiments and conclusions apply to the higher animals? And on trying the same mode of investigation upon any of the warm-blooded quadrupeds we should arrive at the absolute certainty that no such results could be obtained. A dog or cat, for instance, will not live for one moment after division of the spinal cord at its junction with the brain; much less will it perform any quasi-voluntary acts. In these, as in man, under certain diseases or injuries, some simple reflex motions may be elicited; but nothing that resembles complex voluntary action in any way. It has never occurred to any physiologist to doubt that *certain* motions and actions in man are automatic; nor that a much greater proportion of the actions of the lower animals must be considered so; but it would require many intermediate steps of argument to enable us from this to conclude that man is an automaton.

2. What has the "aggregate common sense" of mankind to say to this question? Does any man's personal experi-

ence lead him to the conclusion that he is an automaton? I think not. It is only as a sequel to reasoning, or pseudo-reasoning, that he arrives at this stage of confusion. On the contrary, every sane man knows that, within certain limits, physical, social, legal, and the like, he can exercise a definite power of *choice* as to what he will do, and what he will leave undone. And that this kind or appearance of choice is not delusive, is admitted by Mr. Huxley himself, candidly, even if reluctantly. In his essay on "The Physical Basis of Life" he confesses that "*our volition counts for something as a condition of the course of events*;" and that this "can be verified experimentally as often as we like to try,"—so recognizing our personal consciousness as authoritative and trustworthy, to this extent;—and as quoted above, in his latest essay, he allows that "we are in many respects able to do as we like."

In what sense, then, are we supposed to be automata? Mr. Huxley seems to be playing a little game of bo-peep with the idea: first, we are automata pure and simple; that we are *conscious* automata is granted, but apparently rather by way of concession to prejudice. Then we find ourselves endowed with free will and power "to do as we like." And finally it appears that "there is no proof that any state of consciousness is the cause of change in the motion of the matter of the organism," and that "the feeling we call *volition* is not the *cause* of a voluntary act, but the symbol of that state of the brain which is the immediate cause of that act."†

Some special training in mental gyration is certainly required to enable us to follow, without vertigo, these ever-changing phases of opinion. A plain man, attributing only the ordinary and received meanings to words, might well be justified in asking, "What does it all mean?"

It is highly desirable, in a case like this, where the general conviction and "aggregate common sense" of mankind are set aside as untrustworthy, to ascertain in what the *truth* of a doctrine consists, and on what it depends. If assertion and reiteration, on high authority, constitute truth, then are these doctrines

* Lay Sermons, p. 145.

† *Fortnightly Review*, Nov. 1874, p. 577.

very true indeed; but perhaps that will not be contended. On the other hand, they are not *necessarily* untrue, *because* opposed to the general conviction and consciousness of men. I *think*, for instance, that in any given act A, I exercise my volition V, to change my place by locomotion, to escape sensation S. But if I am assured that S directly excites in my nervous system the change which affects A, and that my sensation V, which I erroneously suppose to be volition, is only a "symbol" of the state of brain so produced, I have no absolute and incontestable answer to the allegation, except such as arises from the *dicta* of my own consciousness, and from the testimony of all other men.

In the same way a person who is generally called "color-blind" may tell me that all ripe cherries are of the same color as the leaves of the tree. I can but reply that I see them differently, and that, with very few exceptions, all men do the same. Should he reply that he and the few exceptions alone see rightly, and that I and all the world are subject to diseased vision, I do not know that the argument could be profitably prolonged. The truth is, that in all such questions as these, our ultimate appeal must and will be to the evidences of our own consciousness. It may be proved to us again and again that this evidence is unreliable,—that consciousness is liable to this, that, and the other error, physiologically and pathologically. We know, when we come to reflect, that this much-despised consciousness is at the very root of *all* our knowledge and *all* our belief; and that if we propose to reject its testimony, we *pro tanto* close our *only* source of information.* We may for a moment be startled by being told gravely and authoritatively that we are only conscious automata, as we should be if assured with equal solemnity that some marvellous change had suddenly occurred

in the color of our skin or hair. But as in the latter case we should look in the glass, and trust implicitly to its evidence as revealed through our consciousness; so in the former, when told that we can neither think, act, nor move, except automatically, we arise and walk, if we so wish it, and our consciousness says, "*Solvitur ambulando.*"

If a speaker in an assembly, or a piece of music in a concert, displease me, I *think* I balance in my own mind the advantages and disadvantages of leaving the room, and *feel* that I act accordingly. If this idea of mine is deceptive, and I am only obeying a state of brain of which my "supposed volition is a symbol," I am certainly acting automatically; but in that case, it is not true that *my volition counts for anything in the course of events*, which Mr. Huxley asserts to be the case. In regard to any individual act or motion, it is no doubt impossible, except by personal consciousness, to *prove* that it is not automatic; but in that case the suggestion of free will in any form is out of place. On the other hand, if the said act be the result of any intelligible form of volition, it certainly is not the act of an automaton. One or the other view we must adopt; there is no compromise or alternative possible.

The assertion, however, that "Man is but a conscious automaton" does not profess to be based on the results of experience or consciousness, but upon considerations connected with his nature and origin. It is, as stated in the outset, the logical and inevitable corollary of the doctrine of Evolution. If this doctrine, as now held by a large and powerful section of the scientific world, does indeed, as it professes, afford the only possible solution of the various problems of ontology, then it follows naturally and of necessity, that matter *is* all-sufficient, and that man *is* an automaton, "without spirit or spontaneity." Then is our immortality a dream; volition, choice, and responsibility are mere delusions; virtue, vice, right, and wrong, are sounds without possible meaning; and education, government, rewards, and punishments, are illogical and mischievous absurdities. Let us eat and drink, for to-morrow we shall be carbonic acid, water, and ammonia.

It cannot be too clearly understood

* A distinguished and learned writer, whom for the present I forbear to name, lately urged the necessity of studying the operations of the mind by investigating the structure and functions of the brain; because from the unreliableness of our consciousness, no other course offered any hope of success. The idea is amusing enough; but would have been more practical had it been further shown how we were to dispense with this unreliable auxiliary.

that the *consequences* of a doctrine afford no argument whatever against its acceptance. My reason for briefly enumerating some of them here is that I have met with many earnest and even educated men who have accepted these doctrines without investigation, *because* propounded on high authority, without reasoning or reflecting what these consequences were, or what is their logical sequel.

It is evident, however, that the importance of these results renders it absolutely necessary to inquire What is this doctrine? and what is its scientific value? For this inquiry the time is fully ripe. Evolution, which not long ago was modestly, even somewhat timidly, advanced as offering a rational solution of certain natural phenomena, is now boldly set forth, with unlimited pretension, as affording the only possible or thinkable system of nature. The last edition of the gospel of Evolution, the "Constructive Philosophy" of Mr. Herbert Spencer, is announced as "stereotyped," conveying a significant intimation that the system is now complete, and that no further advance in that direction is probable or required; and those who do not accept it are described as only "those who have not kept pace with the recent advances in natural history," or "who have lagged behind in science," and as generally unworthy of consideration. Evolution, in one word, is the Shibboleth of modern progress.

"The question of questions for mankind," says Professor Huxley,* "the problem which underlies all others, and is more deeply interesting than any other, is the ascertainment of the place which man occupies in nature, and of his relations to the universe of things. Whence our race has come; what are the limits of our power over nature, and of nature's power over us; to what goal we are tending; are the problems which present themselves anew, and with undiminished interest to every man born into the world?"

By the conclusions of Evolution, these problems would appear to be definitively solved. As to man's origin, it is now *known* that he is the last term in a long but uninterrupted series of developments, beginning with "cosmic gas," and effected without "the intervention of any but

what are termed secondary causes."^{*} As to his present relations to the universe of things, and his power over nature, he is an automaton, and nothing more than a "part of that great series of causes and effects which, in unbroken continuity, composes that which is, and has been, and shall be, the sum of existence."[†] To what goal *the race* is tending is not yet satisfactorily known, but individually, the man resolves into carbonic acid, water, and ammonia, and has no more personal future existence than a consumed candle.

The earliest condition of our world (or universe) presents itself to the "eye of the imagination" as a vast expanse of "cosmic gas," in which it is to be inferred that there exists but one form of matter, and probably only one form of force or motion.

After this we catch glimpses of a "fiery cloud," in which "not alone the more ignoble forms of life, not alone the nobler forms of the horse and lion, not alone the exquisite and wonderful mechanism of the human body, but the human mind itself—emotion, intellect, will, and all their phenomena . . . all our philosophy, all our poetry, all our science, and all our art—Plato, Shakespeare, Newton, Raphael"—all are supposed to be "latent" and "potential."[‡] (See also footnote† at p. 650, second column.)

Then follows a long period of cooling and contraction, by means of which the crust of the earth is formed, and the once homogeneous matter becomes differentiated by a process to be alluded to hereafter. Watery vapors are condensed; seas, rivers, and lakes are formed; and thus the earth is prepared for the appearance of Life, which is first recognized under the form of sea-slime, or mucus (Haeckel).

Opinions are not quite in unison as to the mode in which this living mucus or "*protoplasm*" (Oken) arises; but all are agreed that it is a product of inorganic matter and force without any creative intervention. Oken's account is direct and unhesitating—"Light shines upon the water, and it is salled." *Light*

* Man's Place in Nature, p. 108.

† *Fortnightly Review*, Nov. 1874, p. 577.

‡ Professor Tyndall on the Scientific Use of the Imagination.

* Man's Place in Nature, p. 57.

shines upon the salted sea, and it lives."* Perhaps this would scarcely be considered sufficiently explicit as a scientific statement. Mr. Herbert Spencer, the "Apostle of the Understanding," as he is termed by Professor Tyndall, is much more circumstantial. Thanks to him, we now know exactly how organic matter is formed out of inorganic material. It is in this wise:—

"Certain of the ethereal waves falling on them [*i.e.*, the carbonic acid, water, and ammonia] . . . there results a detachment of some of the combined atoms, and a union of the rest. And the conclusion suggested is that the induced vibrations among the various atoms, as at first arranged, are so incongruous as to produce instability, and to give collateral affinities the power to work a re-arrangement which, though less stable under other conditions, is more stable in the presence of these particular undulations."†

And, to quote a well-known prestigator, "*that's the way it's done.*"

Having arrived by this simple and lucid process at the sea-slime, mucus, or protoplasm, there seems to be no further difficulty or doubt. The *monera* is the first form of individual life, and this "was formed from inorganic matter" (Haeckel). Then by successive evolutions we pass through amoeboids, worms, polyzoa, and ascidians, "which last produced the two remaining stripes of the vertebrata and the mollusca." Amongst the vertebrata are found sundry families of apes, from one of which, the Catarhini, man is directly and lineally descended.

Those who wish to verify this abstract are referred to Dr. Haeckel's "Natural History of Man," or to what is more readily accessible to the many, Professor Huxley's excellent review of the same, entitled the "Genealogy of Animals," as also to Mr. Darwin's "Descent of Man." I have not attempted here to give more than the barest outline of the general idea of the doctrine of Evolution.

From the gravity with which these statements are enunciated, from the vast number and weight of the books written in support of them, and from the enormous amount of learning and research of which they seem to be the result, it might well appear as though this were a system founded on knowledge and observation.

It is somewhat difficult to realize the idea that all this is but a figment of the imagination; and that at the best it is but a hypothesis, in direct support of which not one single fact in the whole range of natural history or palæontology can be adduced.

It is in this doctrine that is illustrated what Professor Huxley calls "Nature's great progression, from the formless to the formed, from the inorganic to the organic, from blind force to conscious intellect and will." We find man set forth as a natural and inevitable product of the inorganic world, without "the intervention of any but what are termed secondary causes,"* and necessarily with only such attributes as attach to such a material origin. He is an automaton and nothing more.

This is a conclusion summary enough, but the end is not yet. The tendency of Evolution is to reduce all force to one expression or formula, and *that* the mechanical. Mental phenomena are but higher expressions of the ordinary vital and nutritive changes; *these* are but the chemistry of quaternary compounds; and chemical force in its turn is not to be distinguished from mechanical, except under the penalty of sacrificing all claim to enlightened views. In the *Fortnightly Review*, for February, 1869, Professor Tyndall says:—"I do not think that any really scientific mind at the present day will be disposed to draw a substantial distinction between chemical and mechanical phenomena." And thus the modern school of philosophy recognizes but *one force*; all nature, whether living or dead (if indeed there is any difference between the two), is but mechanical.

It appears further, according to this system of philosophy, that not only is there but one force in nature, but there is only "one ultimate form of matter, out of which the successively more complex forms of matter are built up."† And finally it would seem that matter itself, as generally conceived, does not necessarily exist, but may be only a "phenomenal centre of energy" or force;‡ and

* Man's Place in Nature, p. 103.

† Herbert Spencer's Principles of Psychology, vol. i. p. 155.

‡ Matter is only a "hypothetical cause of states of our own consciousness."—Physical Basis of Life, p. 143.

* Elements of Physiophilosophy, Sec. 905.

† Principles of Biology, vol. i. p. 82.

thus we arrive at Cimmerian darkness, where "naught is everything, and everything is naught."

This, although a meagre and bare, is, I believe, a tolerably faithful outline of a system, which is now *known* to afford the only possible solution of the mystery of the universe, a conclusion the grounds of which "will never be shaken,"* a doctrine not founded "on the basis of vague conjecture, but of *positive knowledge*."† It is contrasted with the doctrine of "special creation," by Mr. Herbert Spencer, much to the disadvantage of the latter; and the comparison concludes thus:—

"The belief which we find thus questionable, both as being a primitive belief, and as being a belief belonging to an almost extinct family, is a belief that is not countenanced by a single fact. No one ever saw a special creation; no one ever found proof of an indirect kind that a special creation had taken place. It is significant, as Dr. Hooker remarks, that naturalists who suppose new species to be miraculously originated, habitually suppose the origination to occur in some region remote from human observation."‡

If this be intended for argument, it is certainly double-edged. Did any one ever see an Evolution? or did any one ever see *proof* of an Evolution having taken place? The answer must be No! however circuitous and veiled it may be. In the remaining allegation, there is an unconscious and childlike innocence that almost disarms criticism. The system that demands "ten or a hundred thousand generations" for the development of the distinguishing characters of a single species, and a world so different from its present state that not even a trace of its existence remains, can scarcely object logically or consistently to the relegation of certain phenomena to a "region remote," whether in time or in space.§ And with all this, those who do not or cannot accept this Evolution

doctrine are denied the possession of the very faculties of thought or belief. To any one who says that he *thinks* the universe was created, Mr. Spencer replies, "No! you do not think so, for such a doctrine is not thinkable." And to those who say they *believe* in a Creator and a creation, Mr. Spencer replies, "No, you do not believe, you only believe you believe."¶ Surely this is the very Dunderaryism of philosophy.

But it is far from my present object to discuss or uphold the theory ("if it can be so called") of creation, or of any other system of ontology, in opposition to Evolution. Creation is no more accessible to proof "from experimental demonstration" than is Evolution. It is not a *scientific* doctrine, and those who believe in it do so on far other than scientific grounds. The question is not whether the doctrine of creation is tenable or otherwise, but whether that of Evolution is true or not.

It is not altogether easy to approach this question so as to obtain a decisive answer. If we treat it as a scientific inquiry, and ask for some confirmatory evidence, we are told almost plaintively, that "the strength of the doctrine of Evolution consists not in an experimental demonstration."‡ If we further inquire how it is to be approached, and in what its strength *does* consist, we fail to get any definite answer, except some vague statement, as to "its general harmony with scientific thought." Indeed the attitude of Evolution is entirely exceptional. It seems to be taken for granted that the doctrine possesses some esoteric and mysterious principle of vitality and credibility, which makes it independent of any support from science or certain knowledge. We have a right, however, to expect, if it be a true philosophy, that whenever it comes into relation with the results of observation and experience, it shall not be found *opposed* to these. How far this is the case, further inquiry will show.

The first question that arises then is this: *Is it true* that there is originally but one form of matter? Mr. Herbert Spencer says that there is "reason to suppose" so; and that "by the different

* Darwin's Descent of Man, vol. ii. p. 385.

† Professor Tyndall's Belfast Address, p. 5.

‡ Principles of Biology, vol. i. p. 336.

§ "If it were given to me to look beyond the abyss of geologically-recorded time, to the still more remote period when the earth was passing through physical and chemical conditions which it can no more see again than a man can recall his infancy, I should expect to be a witness of the evolution of protoplasm from not-living matter."—Professor Huxley's Critiques and Addresses, p. 239.

* Vide Principles of Biology, vol. i. p. 337.

† Professor Tyndall's Address, p. 58.

grouping of units, and by the combination of the unlike groups each with its own kind, and each with other kinds, it is supposed that there have been produced the kinds of matter we call elementary."* The "*reason to suppose*" all this, and the subsequent *supposing* of it seem to exist only in Mr. Spencer's own mind; and to have their *raison d'être* in the emergencies of the "constructive philosophy." It is known to chemists that a very few of the now supposed simple bodies may be *suspected* to be compound, as one or two of the gases and some less known bodies; but I have never heard of any "*reason to suppose*" that iron, phosphorus, iodine, and gold were composed of different arrangements of the same units since the time when alchemy gave place to chemistry.† A captious person might perhaps be disposed to ask, also, how it happened that with one form of matter and one force any "different groupings" or "further combinations" could possibly occur. But this would doubtless be dismissed as a frivolous detail.

An excellent illustration is afforded by this subject of the mode in which the "constructive philosophy" is built up, and of the gigantic strides that are taken from conjecture to certainty in the interests of the Evolution hypothesis. Mr. Spencer, having seen "*reason to suppose*" such and such things, as already quoted, in the very next paragraph, and without adducing any proof whatever, treats these suppositions as ascertained facts, and proceeds to build upon them as if they were solid foundations of scientific truth in this wise—"If, then, WE SEE (!) that by unlike arrangements of like units, all the forms of matter, apparently so diverse in nature, may be produced," &c., &c.‡ Such being the received method§ of

evolving science out of personal consciousness at the present day, it ceases to be subject for surprise that so many volumes of such portentous dimensions should have appeared, containing so little absolute addition to our certain knowledge of nature.

Is it *true* that there is but one form of force; that chemical and mechanical forces are fundamentally the same? Generalization is very pleasant, very attractive, and very philosophical when it is legitimate, and when the resultant formula covers and includes *all* the phenomena treated of; but it is eminently injurious to the advancement of knowledge if these conditions be not fulfilled; when from detached facts a desperate guess is made at analogies and resemblances which do not exist in nature. It may be fairly questioned whether we are not getting on too fast, and whether true science will not rather be hindered than advanced by such rash leaps in the dark. For what advantage is it to us to say that chemical force is mechanical in its operation, if we have at the same time to explain that it is something different? Surely this tends to great confusion of thought as well as of verbiage. If we fasten together two plates of iron with screws or rivets we *call* the union mechanical. If we dissolve these iron plates in mineral acids we *call* the process chemical. It is certainly convenient to know by different names processes that differ so much, and until their virtual identity is much more clearly demonstrable than it is at present, the advantage of further generalization is problematical.

But both in this order of phenomena, and in some others to be noticed hereafter, the authoritative statements as to "identity" of matter, force, or essence, are so extraordinary, and so impossible to be received or comprehended by the ordinary intelligence, that some special theory seems to be required to account for them; and I would venture to suggest one that would perhaps remove many difficulties and misunderstandings. I

* Principles of Psychology, vol. i. p. 155.

† Büchner, a most thorough-going Evolutionist, affirms on the contrary, that "nitrogen, carbon, hydrogen, oxygen, sulphur, and phosphorus possess their inherent qualities from eternity"—implying by this that all the elementary bodies are eternally different.

‡ P. 28, *Op. cit.*

§ A curiously similar instance of *evolution* of truth occurs in Professor Tyndall's Essay on "Scientific Materialism." In one sentence (Fragments of Science, p. 120), he states that "we should, on philosophic grounds, expect to find" such and such physical conditions;—

and in the next commences an induction from the same, with the phrase, "The relation of physics to consciousness *being thus* invariable!"—a relation which, as I have above pointed out, does not exist in any demonstrable form, if at all.

cannot but suppose that with a new philosophy there has arisen a new language or terminology, in which words have not the same meaning as they formerly had. One illustration will explain the bearing of this theory. On February 2, 1871, Professor Tyndall delivered a discourse at the Royal Institution on "The Identity of Light and Radiant Heat." The lecture was, as usual, interesting in the extreme; and the experimental illustrations were of that brilliant and striking order that apparently he alone can accomplish. But a considerable part of these illustrations were absolutely dependent upon the *differences* that exist between light and radiant heat, as in the following experiment:—

"A horizontal beam of light was reflected upwards by a plane mirror, and when the light was cut off by the introduction of the opaque cell, a powerful beam of reflected heat was proved still to remain. The luminous beam was then totally reflected to a horizontal direction; the light was again cut off, and a powerful deflection of the galvanometer needle was obtained by the residual heat-beam."^{*}

In this, and several other experiments to show *identity*, we saw the beam of heat separated from the beam of light by *reagents*, so to speak; radiant heat would pass where light would not, and so on.[†] I conclude, therefore, that words of this kind have now a different signification to that which they formerly possessed, and that when Professor Tyndall speaks of chemical and mechanical forces being substantially the same, he intends to imply that they are as different as they well can be; and in like manner when, as we shall find shortly, Professor Huxley can see *no difference* between the formation of water from its elements under the influence of the electric spark, and the assimilation of carbon, hydrogen, oxygen, and nitrogen by a living organism, it may be that he intends to imply that the two processes are utterly and irreconcilably different,—in which he will be quite correct.

But the real question as to the *truth* of Evolution commences at the next step in "Nature's great progression," that is, in

^{*} Proceedings, 1871, p. 419.

[†] Professor Tyndall explained, in his treatise on "Light," published in 1873, that when he said "identity," he did not mean identity in "all respects."

the progression from the inorganic to the organic. Of this part of the doctrine Mr. Huxley is the best-known and most distinguished exponent. He claims no originality for the idea of Protoplasm as the "Physical Basis of Life," but he has made it all his own, and inseparably associated it with his name, in England at least, by the inimitable charm of style, and the marvellous fertility of illustration with which he has invested it, in the well-known essay in the *Fortnightly Review* for February, 1869. This essay was written, as it appears, with the double object of showing* that all life, activity, and intelligence, are solely due to the arrangement of the molecules of ordinary matter,—and that *materialism* has no sound philosophic basis.[†] His mode of reconciling the latter proposition with the former will perhaps appear hereafter; the doctrine in question is as follows:—

The Physical Basis or Matter of Life is "*Protoplasm*." This is composed of ordinary matter, differing from it only in the manner in which its atoms are aggregated, and is again resolved into ordinary matter when its work is done."[‡]

"The matter of life . . . breaks up . . . into carbonic acid, water, and ammonia, which certainly possess no properties but those of ordinary matter. . . . Carbon, hydrogen, oxygen, and nitrogen are all lifeless bodies. Of these carbon and oxygen unite in certain proportions, and under certain conditions, to

^{*} See Yeast, p. 90.

[†] In Professor Huxley's essay on the "Genealogy of Animals," he thus states the "fundamental proposition of Evolution:—"That proposition is, that the whole world, living and not living, is the result of the mutual interaction, according to definite laws, of the forces possessed by the molecules of which the primitive nebulousity of the universe was composed. If this be true, it is no less certain that the existing world lay, potentially, in the cosmic vapor; and that a sufficient intelligence could, from a knowledge of the properties of the molecules of that vapor, have predicted, say the fauna of Britain in 1869, with as much certainty as one can say what will happen to the vapor of the breath in a cold winter's day." And yet Professor Huxley "repudiates" the materialistic philosophy, and states in "Yeast," that one great object he had in view in writing his essay on the "Physical Basis of Life," was to "show that what is called Materialism has no sound philosophical basis!"

[‡] P. 136. This and the following references are to the pages in the original essay in the Review above mentioned.

give rise to carbonic acid; hydrogen and oxygen produce water; nitrogen and hydrogen give rise to ammonia. These new compounds, like the elementary bodies of which they are composed, are lifeless. But when they are brought together, under certain conditions, they give rise to the still more complex body, protoplasm; and this protoplasm exhibits the phenomena of life.

"I see no break in this series of steps in molecular complication, and I am unable to understand why the language which is applicable to any one term of the series may not be used to any of the others.

"When hydrogen and oxygen are mixed in a certain proportion, and an electric spark is passed through them, they disappear, and a quantity of water, equal to the sum of their weights, appears in their place.

"Is the case in any way changed when carbonic acid, water, and ammonia disappear, and in their place, under the influence of pre-existing protoplasm, an equivalent weight of the matter of life makes its appearance? . . .

"If scientific language is to possess a definite and constant signification whenever it is employed, it seems to me that we are logically bound to apply to the protoplasm, or physical basis of life, the same conceptions as those which are held to be legitimate elsewhere. If the phenomena exhibited by water are its properties, so are those presented by protoplasm, living or dead, its properties.

"If the properties of water may be properly said to result from the nature and disposition of its component molecules, I can find no intelligible ground for refusing to say that the properties of protoplasm result from the nature and disposition of its molecules."*

This, then, assumes to be a scientific statement, clothed in "scientific language," and, as such, it is amenable to ordinary investigation as to its accordance with, or departure from, the known facts of science. I have quoted it at length, first, because it is rarely that in the history of Evolution we are brought face to face with anything that resembles *science*; and secondly, because it is the most important link in the chain of the doctrine, and with the demonstration of its truth or error Evolution stands or falls. If we are compelled to acknowledge the formation of living from non-living matter, by ordinary chemical affinities, Evolution has made good its position—all the rest is mere detail—and man is an automaton, "without spirit or

spontaneity." If, on the other hand, it can be demonstrated that there is, and can be, no truth in this part of the doctrine, Evolution has no *locus standi*, and must relinquish all pretension to existence as a scientific hypothesis. To this statement of Professor Huxley's, then, I propose to apply the test suggested by himself, and inquire, "*Are these doctrines true?*"

I know of no form of negation sufficiently explicit, comprehensive, and emphatic in which to reply to this question. The doctrines as here stated are so utterly at variance with the most familiar facts of chemistry that it is marvellous they should have so long passed unchallenged.* If Professor Huxley expresses an *opinion* on a matter of science or philosophy, it is doubtless worthy of all consideration, *as such*, but if he makes a scientific statement, couched in "scientific language," then it is as open to scientific criticism as if the veriest tyro had said it.

To enter into detail: it is in no sense true that protoplasm "breaks up" into carbonic acid, water, and ammonia, any more than it is true that iron, when exposed to the action of oxygen, "breaks up" into oxide of iron. A compound body can only break up into its constituent parts; and these are *not* the constituent parts of protoplasm. To convert protoplasm into these three compounds requires an amount of oxygen *nearly double the weight* of the original mass of protoplasm; speaking approximately, every 100 lbs. of protoplasm would require 170 lbs. of oxygen.

Under *no possible "conditions"* can carbonic acid, water, and ammonia, when brought together, "give rise to the still more complex body, protoplasm." Not even on paper can any multiple, or any combination whatever of these substances, be made to represent the composition of protoplasm, much less can it be effected in practice. Carbonic acid (C O_2), water ($\text{H}_2 \text{O}$), and ammonia (N H_3) cannot by any combination be brought to represent $\text{C}_{100} \text{H}_{170} \text{N}_4 \text{O}_{17}$, which is the equivalent of protein or protoplasm.

* In Professor Huxley's essay on Yeast (see Critiques and Addresses, p. 90), he denies ever having "said anything resembling" the assertion that "life matter was due only to chemistry,"—and that such an assertion would be "absurd!"

* Unchallenged, that is, on purely chemical grounds. On other issues, both relevant and irrelevant, they have been often objected to.

But the most incredible of all the errors, if it be not simply a mystification, is found in the comparison between the formation of water from its elements and the origination of protoplasm. Hydrogen and oxygen doubtless unite to form an equivalent weight of water; that is, an amount of water equalling in weight the combined weights of the hydrogen and the oxygen; and Professor Huxley asks, "Is the case in any way changed when carbonic acid, water, and ammonia disappear, and in their place, under the influence of pre-existing protoplasm, an equivalent weight of the matter of life makes its appearance?"

The answer is, Certainly; the case is changed in every possible way in which a process, whether chemical or otherwise, can be changed. But it must also be premised that the fact as stated is *not true*, that when these three substances disappear, under certain conditions, an "equivalent weight of the matter of life" makes its appearance." Every chemist knows what an "equivalent weight" means—knows also that there can be no weight of protoplasm "equivalent," chemically speaking, to any amount of carbonic acid, water, and ammonia, that may or can have disappeared. These are simple, well-known, and understood chemical facts, and need no discussion. But granting for the moment, and for the sake of argument, that these bodies disappear, and that protoplasm appears, it is manifest—almost too manifest to require stating—that there is *no resemblance whatever* in the two processes by which the results which Professor Huxley considers identical are obtained. In the formation of water the whole of its constituent parts combine to form an equal weight of the compound; the case is entirely otherwise with regard to protoplasm, for here the so-called elements *do not combine at all*. On the contrary, they are uncombined or decomposed, by a process and by affinities most assuredly unknown in our laboratories. The carbonic acid and the ammonia are certainly decomposed, and whilst the carbon and nitrogen are assimilated, and add to the bulk of the plant, part of the oxygen is eliminated by the leaves, and part is destined to the performance of various functions in the economy.

Yet we are invited to see in this com-

plex programme of decomposition, selection, fixation, and rejection, only a process analogous to the formation of water from its elements; and Professor Huxley can see "*no break*." It might be interesting to inquire how wide a chasm must be before it is visible to an Evolutionist; and in the subsequent part of the inquiry it is probable that further illustrations will be met with of the Emersonian axiom that "the eye sees only what it brings with it the power of seeing."

But what especially and generally distinguishes the formation of protoplasm from all these chemical processes is that it is never formed except under the immediate contact and influence of pre-existing and living protoplasm.

It is this which constitutes the "break" that Professor Huxley cannot see. It is this appearance of an *entirely new* and distinct order of affinities that annuls the force of Professor Tyndall's truly elegant and powerful illustration of a curve whose elements have been determined "in a world of observation and experiment" being prolonged into "an antecedent world"—whence we "accept as probable the unbroken sequence of development from the nebula to the present time."* There is, there can be, no one curve the elements of which will comprehend the phenomena of matter, of life, and of mind. There is no transition from one order of activity to the other; there is no "great progression from the inorganic to the organic." To say otherwise is mere waste of time in asserting what is at once incapable of proof, and at variance with all known facts.

How such doctrines came to be received can only be accounted for in Professor Huxley's own words when treating on some other antagonistic "teaching," which he says was only "tolerable on account of the ignorance of those by whom it was accepted." Referring to some anatomical question, he says further that "it would, in fact, be unworthy of serious refutation, except for the general and natural belief that deliberate and reiterated assertions must have some foundation."† It is by this time tolerably clear that Professor's Huxley's "Chemistry of Life" has no foundation

* Scientific Use of the Imagination.

† Man's Place in Nature, p. 85.

except that of "deliberate and reiterated assertion."

If such be the case with the chemistry, what is to be said for the argument founded upon it, or attached to it—if, indeed, argument it can be called? Seeing "no break" in the processes by which life is evolved from inorganic matter, Professor Huxley jumps to the conclusion that we are no more justified in speaking of "vitality" than we should be in speaking of "aquosity," thus overlooking the most obvious necessity for distinguishing between things that differ. Water has none but physical properties, or in Professor Huxley's own words, none "but those of ordinary matter;" therefore we require no special term to express succinctly the sum of its properties. If we did, "aquosity" would be perhaps as good as any other. But a living organism has certainly some properties or functions which are materially different from those of "ordinary matter," in addition to those which it possesses as a chemical compound merely—that is, it has its mechanical and chemical relations, but it also has *something else*.

And here arises the distinction: we do not speak of "vitality" so long as we discuss protoplasm only in its physical and chemical relations, but when in addition to these it has life, we require something to express that life, and we call the sum of its functions its "vital properties."

Names are to know things by. We are accustomed to call a certain class of forces "mechanical," and in general we understand what is meant by the term. When we meet with other manifestations of force, apparently differing from these in energy, complexity, and what we might almost call *origination*,* we call these chemical, electrical, magnetic, and the like. Doubtless these are closely inter-related, and it may be also that they are "substantially" mechanical, according to Professor Tyndall's opinion. But it would not tend to clearness of thought, nor yet to comprehensibility of scientific language, to speak of the induced electric current as a mechanical phenomenon; nor of the effervescence of chalk on the addition of a strong acid as a magnetic manifestation.

Further, when we meet with phenom-

ena indicating forces still more complex, still more active, and even *suggesting* spontaneity, we are not satisfied to sum these up under a category especially adapted to express only a simpler and lower order of energies. It appears unsatisfactory to call them chemical, electric, or magnetic, until we can demonstrate how these forces are disposed or combined so as to produce the complex manifestations of contraction, nutrition, and reproduction, to say nothing for the present of thought, sensation, and will. We want another and more specific name; and inasmuch as these acts are *essentially* and *exclusively* the acts of living matter, we call the *sum* of such actions "vitality," and the forces which immediately preside over their production "vital." Moreover, until their identity with the forces of inorganic nature can be demonstrated, or inferred on some better ground than vague conjecture, reckless assertion, or hasty generalization, we think ourselves authorized to believe in some essential difference. Vital or organic force or affinity is at least as different from chemical or magnetic force or affinity as these are from those of a mechanical order.

I have said "as different;" but this does not express the whole idea. Mechanical force is convertible into the others, under certain limitations, and the more active forces are all convertible into the mechanical. But by no known means are we able to convert any of these forces into the higher order of energy that we have called "vital." Even this is not all: not only are we unable to produce *living* force, but we are unable to make a combination of *non-living* matter out of inorganic elements, resembling in any way matter that may or can live. Supposing protoplasm to be only a chemical compound—which is not impossible—the affinities whereby it is held together belong to a chemistry of which we *know nothing*. We can decompose it into what we are pleased to call its elements, but it has never been reformed, except under the direct agency of *actually living* protoplasm; and thus we are indebted not only for all organization, but for all organizable matter, to an *original, specific, and self-propagating endowment*. It is of small moment what this endowment, which we ever and en-

* In a motor aspect.

tirely fail to imitate, is called. It is sufficient for us to know that, so far as our present knowledge extends (and we have no right to dogmatize on conjecture) it differs infinitely more from chemical or electric force than these differ from each other, or either of them from the mechanical. For anything I can see, the old expression "vital force" is as good as any other. In any case the difference is specific, and not one of degree merely; and it is no part of true philosophy to overlook such distinctions, or to ignore them to satisfy the exigencies of a formula or a creed.

This inability to construct organizable matter (say protoplasm) out of its elements, is without doubt a recognized difficulty in the way of the absolute demonstration of Evolution. What is the usual answer to it, or method of meeting it? Mr. Huxley rather ignores it; but Mr. Herbert Spencer feels that it must be met, with some form of words at least, and his followers copy him verbatim. He says—

"The chasm between the inorganic and the organic is being filled up. On the one hand, some four or five thousand compounds, once regarded as exclusively organic, have now been produced artificially from inorganic matter: and chemists *do not doubt their ability** so to produce the highest forms of organic matter. On the other hand, the microscope has traced down organisms to simpler and simpler forms, until in the *Protophytes* of Professor Haeckel, there has been reached a type distinguishable from a fragment of albumen only by its finely granular character."†

It seems incredible that this should be intended for serious argument. Does not every candid observer know that this said "chasm" is not in any way "being filled up;" and that the chemist could quite as easily construct a full-grown ostrich, as this despised bit of finely granulated albumen? And as for the "four or five thousand compounds," as well might the goldsmith say that he did not "doubt his ability" to make gold out of a baser metal, because he had already moulded it and colored it in four or five thousand different fashions. It is true

that systematic writers on chemical science divide their subject into "organic" and "inorganic;" and also that, according to the individual views of the writer, many compound bodies are placed in one or other division interchangeably. It is further true that of late years many bodies once supposed to be exclusively of *organic origin*, have been artificially formed. But it is not in any sense true that any substance even distantly resembling *organizable* matter has been formed. The line of demarcation is as wide as ever. For what are these "organic" matters said to have been formed from their elements? They are chiefly binary and ternary compounds, as cyanogen, urea, certain acids of the compound radical class, some alcohols, ethers, and the like. Not one of them bears the most remote resemblance to anything that *can live*. Few of them contain nitrogen, and these few, chiefly *amides*, are only combinations of ammonia or ammonium with other binary or ternary compounds, and can only by courtesy or convention be allowed to be of "organic" nature. Neither chemically nor physically are they in any way allied to viable matter. One least particle of albumen, granulated or otherwise, would be a thousand-fold more crushing answer to the opponents of Evolution than myriads of such compounds.

If rightly considered, the very success of modern chemistry in this domain, whilst an impassable barrier still prevents any progress towards the construction of *organizable* matter, should lead us to the conviction that the affinities of life and living matter belong to a chemistry of which we know nothing, and which we in vain strive to imitate.

Let the matter be disguised or slurred over as it may, the fact remains that we are utterly unable to imitate vital affinity so far as to make a bit of material ready for its use, or even to make any definite substance that will have similar chemical relations. But even could this be done, a further difficulty would remain—how to breathe into this dead matter the breath of life. We can neither give life to previously inert matter, nor can we restore the life that has, however recently, left the organism. Living tissue, once dead, is dead for ever, as regards the individual organism.

* There are men who "*do not doubt their ability*" to square the circle; but this confidence in their own powers is not generally supposed to entitle them to the rank of great mathematicians.

† Principles of Psychology, vol. i. p. 137.

"If I quench thee, thou flaming minister,
I can again thy former life restore,
Should I repent me;—but once put out
thine,
Thou cunning'st pattern of excelling nature,
I know not where is that Promethean heat
That can thy light relume. When I have
plucked thy rose,
I cannot give it vital youth again,
It needs must wither."

Yet against those who see something more than chemistry, magnetism, electricity, and mechanics, in the affinities that hold together organic bodies, modern physiology launches the scathing sarcasm that we might as well talk of a "steam-engine principle," a "watch principle," or a "railroad principle" as of a vital force or principle. And Professor Huxley inquires with like pungency—

"What justification is there then for the assumption of the existence in the living matter of a something which has no representative or correlative in the not-living matter that gave rise to it? What better philosophic status has *vitality* than *agony*? And why should *vitality* hope for a better fate than the other *itys* which have disappeared since Martinus Scriblerus accounted for the operation of the meat-jack by its inherent *meat-roasting quality*, and scorned the *materialism* of those who explained the turning of the spit by a certain mechanism worked by the draught of the chimney?" (P. 140.)

This is very amusing—no one can be more so than Professor Huxley;—a little perception of facts and analogies would make it perfect. To all this the answer is obvious, if answer is required. All these are machines which man has made, and can again make, by the use of well-known forces and material which he can combine at will; it is not therefore necessary to hypothecate any other force or principle. When man can make any, even the simplest organism, out of inorganic matter, then shall we be compelled to acknowledge that chemical and other forces are sufficient, and that the hypothesis of a vital principle has had its day and may cease to be. To Professor Huxley's illustration I will respond seriously when he has demonstrated to me that meat-jacks have been developed from the beginning of time only and exclusively under the immediate contact and influence of pre-existing meat-jacks. Until then the analogy is scarcely close enough to need refutation or discussion.

Professor acknowledges candidly (p.

140) that "the influence of pre-existing living matter is something quite unintelligible;" but, he adds, as if this were a complete answer by analogy, "does any one *quite* comprehend the *modus operandi* of an electric spark which traverses a mixture of oxygen and hydrogen?" I suppose no one knows better than himself that the two cases are utterly distinct, and afford no illustration whatever one of the other. Certainly we *do not* comprehend the action of the electric spark any more than we comprehend the essential nature of any affinity or force whatever. But we know that we can at will evoke and use the electric spark in much the same way as we can utilize any other chemical agency. We can use it to combine the oxygen and hydrogen, and so form an equivalent of water; and by decomposing this water with adequate adaptations we can reproduce the same amount of the constituent parts, and liberate again the electricity, which can be used again and again indefinitely, making due allowance for the imperfection of our instruments. Can this be done with an organism? Can we arrest or store up the organic force as it departs in the death or decomposition of an organism? Can we make the faintest or most distant approach to this? Professor Huxley knows that we cannot. He knows that not only is the action of a living organism "something quite unintelligible," but that it is unintelligible in a mode and in a region of thought quite apart from the unintelligibility of ordinary chemical or electrical affinities. To persist in saying, then, that vital force is nothing different from ordinary physical and chemical agencies, except perhaps in complexity, whilst confessing that it is "quite unintelligible," cannot be considered as a "scientific statement clothed in scientific language," but must be considered as of the same value as the assertion so perseveringly enunciated by Mr. Pulvermacher, that "Electricity is Life."

But I think that the utterly fatal flaw in the physical theory of life, as set forth by Professor Huxley, is found in the considerations respecting *dead* and *living* protoplasm. The learned professor speaks of dead matter of life and living matter of life; he speaks of mutton as "once the living protoplasm," now

the "same matter altered by death" and cooking, but as not being by these alterations rendered "incompetent to resume its old functions as matter of life" (p. 137). He speaks of its being subjected to "*subtle influences*" which "will convert the dead protoplasm into the living protoplasm"—which will "raise the complex substance of dead protoplasm to the higher power, as one may say, of living protoplasm" (p. 138). All this is dwelt upon at some length, but not a hint is given that there is any difference in chemical constitution, or in "arrangement of molecules" between the dead and the living; and indeed when it is alluded to at all, the idea is pronounced "frivolous" (p. 135), unless I misapprehend the meaning of the writer's rather obscure and perhaps "*quidquid-versal* expressions."

Here then we enter upon a dilemma. The properties of protoplasm are dependent altogether, as we have seen, upon the arrangement of its constituent atoms. But we find protoplasm in one condition manifesting only *passive* properties; and again, without any change, *i.e.*, any known or knowable change, in its chemical properties or arrangement of particles, we find it exercising a vast variety of *active* properties, as assimilation, contraction, and reproduction; not to mention thought, feeling, and will. We have then an effect, nay, a whole train of marvellous effects, *without a cause*,—a conclusion that the most enthusiastic Evolutionist would scarcely pronounce to be in "harmony with scientific thought." And from this dilemma we cannot escape, unless either by hypothesizing a change, mechanical or chemical, of which, by Professor Huxley's own confession, we can possibly know nothing (p. 135), and on which "we have no right to speculate"—or else by confessing that these *subtle influences* of which we have heard are only another name for that *vital force or principle* in which it is now so unfashionable and so unscientific to believe.

Had we not been assured on the highest authority that the principles of Evolution are founded "on *certain knowledge*," and also that these foundations could "never be shaken," we should have perhaps seen ground to suspect that this appeal to "*subtle influences*," to eke

out a process that had been proclaimed with a sound as of many trumpets to be only chemical and mechanical, was merely an attempt to evacuate an untenable position with the honors of war—a somewhat ignominious giving up of the entire question. But Evolution is forbidden to be judged by any ordinary standard: it has privileges, a language, and an inviolability, all its own; and those who think or believe otherwise, do not, as we have before seen, think or believe at all, but only think they think, and "believe they believe."*

One further consideration will aptly conclude this division of the subject. It has been urged, and it is granted, that the protoplasm, cell, or plasma is, in form and chemical composition, apparently identical in all living creatures. Is not this in itself a most pregnant and significant fact, as indicating that there is, beyond all our visual or chemical investigations, a distinct and special endowment in operation, of which we know absolutely nothing? For whilst it is true that man can "assimilate lobster," and the lobster can "return the compliment" and assimilate man, it is equally true that the assimilated matter is converted into another and special form of plasma, destined to the performance of the most diverse and varied functions, according as it enters into the composition of the lobster or of man. Here then appears the knot of the whole question. All the activities of life (it is said) arise solely from "the arrangement of the molecules of ordinary matter;" and here we have two such arrangements, in which there is "no substantial difference," manifesting a variety of functions, almost infinitely removed from each other in the two cases; for whilst the functions of the lobster protoplasm may be fairly summed up, as proposed, under the "three categories" of "nutrition, motion, and reproduction of the species," the *same* protoplasm in man is found subservient to the manifestation of the "higher faculties" of "intellect, feeling, and will."

* It is interesting to know also that they lie like "strangled snakes" around the cradle of this science; by the side of which stands the "Majesty of Fact!" (see Lay Sermons, pp. 273-9); and, on the authority of the learned and modest Dr. Büchner, that they are "speculative idiots."

This might appear conclusive as to the existence of something beyond chemical and mechanical "aggregation of atoms" as influencing the dynamic properties of life-matter; but Professor Huxley, whose resources are inexhaustible, cuts the knot by the summary declaration that "all the multifarious and complicated activities of man are comprehensible under these categories," nutrition, motion, and

reproduction; and that these are "substantially one" with, and include, "those manifestations of intellect, of feeling, and of will, which we rightly name the higher faculties" (p. 130).

How this most marvellous proposition is elaborated and vindicated, will afford matter for future consideration.—*Contemporary Review*.

DANIEL DERONDA.*

THE question, What is to be the deliberate judgment of her own age on the writings of George Eliot? is one that demands its answer each day with more urgency. It is not one of mere literary interest. The problems whose solutions she attempts lie at the very foundation of our social life; and we cannot but feel, as we read, that the interest her books excite is not merely such as might be stirred by a work of artistic finish, by an effort of literary skill, but one which pierces to the very joints and marrow of the life we live. It is little to the purpose to compare George Eliot with English novelists of our own or of an earlier day; the points of contact are so few that such a comparison would consist of little but that least valuable of statistical enumerations, a list of contrasts. But one feature the works of George Eliot possess to a degree which no other English writer of fiction has attained, and this is the far-reaching and yet penetrating ethical influence which her studies of society have achieved. Other writers have caught, with more or less quickness of receptivity, the various shifting phases of the life around them, and have transferred these, more or less instinct with vitality, to their pages. There are others who have crowded into supreme moments of thrilling emotion or nervous action, greater brilliancy of romance; but to this writer of our own age belongs a power, possessed by no other writer of English fiction, of analysing and assorting the maxims of our social code. Great as is the literary skill of George Eliot, it is ever subordinate

to this studied ethical and psychological analysis.

It is inevitable that with a writer who affects us thus, one of our first efforts should be to try, as far as we may, to catch something of her point of view, and to trace out for ourselves the salient features of her ethical system. Both her strength and her weakness lie in this above all things, that her ethical system, her views, if we prefer so to speak, of human nature and of human duty, are everywhere predominantly present, independent of the individual characters she creates. Other writers reproduce this or that character copied more or less faithfully from real life, and their views of duty or of human destiny are liable to be shaped by their ever-present sympathy with the lot of the characters they have thus created. With George Eliot, on the other hand, we are ever impressed with the ethical system as something independent of the puppets that are handled on the stage. The characters are not so much living creations, feeling and acting with the fortuitous spontaneity of ordinary humanity—they constantly tend to become subordinated to the author's view of life, to act as illustrative of a special system or theory. The former method is undoubtedly the most legitimate for fiction, but the latter presents a better field for the subtlety of psychological analysis, and it is here that the strength of George Eliot's genius lies.

The very construction of George Eliot's novels, then, forces on us the question, What is the view of human life which underlies them all? The very key-note of her teaching is struck in the lines printed before the title-page of each volume of 'Daniel Deronda.'

* Daniel Deronda. By George Eliot. New York: Harper & Bros. London: Blackwood & Sons.

'Let thy chief terror be of thine own soul :
There, 'mid the throng of hurrying desires
That trample o'er the dead to seize their spoil,
Lurks vengeance, footless, irresistible
As exhalations laden with slow death,
And o'er the fairest troop of captured joys
Breathes pallid pestilence.'

To parallel the passionate fear of unguided human nature that these words express, we should have to go back to the utterances of the Hebrew masters. 'The heart is deceitful above all things, and desperately wicked,' is only another phase of the same feeling—a feeling which has underlain the practical, as well as the professed, asceticism of all ages. No Puritan could trust less to the outcome of undisciplined human nature than does George Eliot; but the melancholy which this distrust inspires in George Eliot is a melancholy unrelieved by the robust religious ecstasy which invigorates the Puritan. The tragedy of untamed human nature forging for itself an indissoluble bond of triple brass in its undying crimes and their self-brought retribution, as it rushes in the flood-tide of its 'hurrying desires,' is the most intense of all tragedies: it is the chief lesson by which George Eliot would purge our passions. Not the most cursory reader can be insensible to the increased insistence on this theme, to the reiteration of this sort of monotone of melancholy in the later novels. There is a wide interval between the gentle soothing of the self-inflicted pangs of passion in *Catarina*, the tender chastening of young pride in 'Janet's Repentance,' or even the intense inward struggle by which Maggie Tulliver is aided to rise beyond and above the mere thought of self; and, on the other hand, the serpent-like crawling selfishness which transforms the gay unthinking Tito into the hardened, callous profligate; the red-hot iron of remorse for passion indulged that eats into the very soul of Harold Transome's mother; the creeping paralysis that overspreads the whole soul of Lydgate after he has once compromised with his own baser self; and the unutterable sadness of the downfall of Gwendolen Harleth and her exulting hopes. The same truth that is taught in these lines that are the motto to 'Daniel Deronda,' is put, with a slight difference of expression only, in the lines

which head one of the chapters of 'Felix Holt.'

'It is a good and soothfast saw,
Half-roasted never will be raw;
No dough is dried once more to meal,
No crock new-shapen by the wheel;
You can't turn curds to milk again,
Nor Now, by wishing, back to Then;
And having tasted stolen honey,
You can't buy innocence for money.'

It is the same teaching, only in different words; and there is hardly a page of 'Daniel Deronda' in which a good action does not appear as an obedience to the warning, or a bad one as an illustration of the truth. In this book, more perhaps than in any other, the very essence of the author's creed of humanity is pushed to its utmost. There is much less of the easy play of humor which we found in its predecessors, much less in the way of by-play to the main action. The digressions, the scraps of psychological analysis, the action of the minor characters, seem all to contribute some additional force to the enunciation of the central truth which the novel is to teach, and to be useful only as they do so.

It is inevitable that this compression of moral purpose should detract something from the literary perfection of the book. We can readily accept digressions and disquisitions interspersed through a novel which lie apart from the main action, and in which the author's fancy seems to rest for a moment in its onward flow, and to gather into a quiet pool in whose depths it can stay for a time before it resumes the main stream of the action. But disquisition becomes more irksome when it is made to serve like the chorus in a Greek tragedy, when it must interpret action for us, and show us the point from which we must view that action. All George Eliot's novels have been weighted by such pregnant disquisitions, and have suffered from the overstrain which they thus throw upon the reader—an overstrain which not only burdens the feeble intelligence of the careless, but which forces even the most attentive to bestow their attention just where they should not, and so mars the proportions of the story. But if the fault has been present in the previous novels, it is undeniable that it is more than ever predominant in this. The disquisitions do not stand as reliefs to

the main action—they do not widen or deepen the meaning of that action—they are really in many cases mere explanations of what otherwise would baffle us in the bias of a character or in the conception of it by the author. Thus, without a dozen or more pages of studied disquisition at the beginning of Book vi., on the relations between strict reasoning and ideal enthusiasm, we could neither understand the view which we are to take of Deronda's character at the most momentous crisis of his life, nor would his action be explicable to us judged from any ordinary rules of human conduct. We require the explanation, but yet we grumble at its necessity. To make the improbable in action appear natural (taking a reference suggested by the motto which heads the chapter) is beyond the reach of mediocrity. By skilful argument it is demonstrable; by only the very excess of genius is it made to appear spontaneous and inevitable. George Eliot was not likely to rest in the impotence of mediocrity; but the question will still arise, Does she not trust more than the highest art would to the demonstrations of argumentative disquisition?

In proportion as the functions of the chorus in tragedy are increased, the drama becomes the more independent of scenic effect and even of development in action. Perhaps something of the same effect is seen in the overstrain of that disquisition which serves as a chorus in fiction. As it is increased the enhancements of situation and of circumstance are neglected; and this is a neglect which an occasional display of power of such a kind by George Eliot has taught us all the more to regret. For the most part she seems to disdain the use of scenic accessories, as if they were in some degree a concession made to sensationalism. It is rarely that we have the thread of the action vibrating, as it does so often in Scott's novels, under the shock of some momentous crisis; rarely even that we have such a moment of dramatic force as the appearance of Rawdon Crawley before Lord Steyne and Becky Sharp; but the few exceptions are of surpassing power. Nothing is grander in its way than the high-wrought moment of dramatic intensity when Esther Lyon gives her evidence

at the trial of Felix Holt. The background of surrounding circumstance was never drawn with more telling effect than in the yachting tour of Grandcourt and Gwendolen in 'Daniel Deronda.'

'The weather was fine, and they were coasting southward, where even the rain-furrowed, heat-cracked clay becomes gem-like with purple shadows, and where one may float between blue and blue in an open-eyed dream that the world has done with sorrow. But what can still that hunger of the heart which sickens the eye for beauty, and makes sweet-scented ease an oppression?'

But for the most part this is a sort of effect which George Eliot utterly ignores. The subtle tragedy of human fate, which seems to make bare its innermost working before her, may pass for her as well in a village bar-room or a Belgravian drawing-room as beneath the majestic distance of the stars: the words in whose utterance it thrills may be spoken as well amid the trivialities of a summer tour as in the hurried moment of the dramatic crisis of a life. The setting of her characters appears to be hardly more noticed by George Eliot than (to borrow one of her own comparisons) we heed the passages that lead to a court of justice. It is we who suffer most from wanting the dramatic support that her untiring insight despises.

There is another characteristic of George Eliot's creations which perhaps helps to mar for us the truth and effectiveness which they unquestionably possess. To many that may hardly seem a defect which is due to refusing any concession to the weakness of common sympathy or the narrowness of common experience. But is there not perceptible, especially in the later novels, an undue lack of any appeal to our ordinary sympathies or our ordinary experience, a lack which seems to keep the characters from being entirely natural? The earlier types—Silas Marner, Adam Bede, Maggie Tulliver—had all of them something that made them kin to us in sympathy, that made them recognisable, if not amongst the actualities, at least amongst the possibilities of our experience. We had not to school ourselves against being provoked with them, we had not to argue ourselves into sympathizing with them. But is there not a lurking feeling of this kind in the mind of many

a reader of the later novels, however unworthy he may feel it, in the light of the preachings of George Eliot? And even when he has got quit of this feeling, when he has learned to admire and hate, for the most part, with the author, does there not remain a something in the better characters, which he cannot help still disliking, something which seems to penetrate into their whole being and to give its leaven to all their phases; and at the same time a disposition to make a little more allowance for deficiencies in other characters which the author appears to hold unpardonable? Is there not an uneasy doubt, even in our admiration of her heroes, whether we disagree with our author's estimate of what is high in human nature, or revolt at an uncomfortable realism in her way of describing it? Take for instance the character of Felix Holt. We recognise—perhaps with a little shame for not recognising it more quickly—the massive simplicity of his character, his strong earnestness, his uncompromising sinking of self: but to the very end can we overlook, or can we tell ourselves that we would be more in the right if we did overlook, the vein of coarseness and irreverence in his nature, the blustering obtuseness of some of his faculties, the unmanly, bullying into which not a little of his teaching of Esther Lyon degenerates, and which we learn to dislike all the more when it is seen side by side with the equal nobility of purpose and infinitely greater tenderness and insight of Rufus Lyon, the dissenting minister? Or take Dorothea, in 'Middlemarch.' Are we to accept her strained self-consciousness, her blind trust in her own guiding, her rigidity in judging others, as contributing traits in her unquestionable nobility of character? or are we to take them as the necessary drawbacks of a heroine? To the last we remain uncertain whether we are meant to suffuse the (to us) darker colors over the whole, and take them as an enhancement of its beauty, or to look on them as the darker specks which a realistic art would paint in the sun. We have no desire to claim for the low tone of common taste engendered by the ordinary novel the dignity of an opinion or the force of a criticism on novels such as those of George Eliot; but we have a suspicion that the

small offshoot of truth which may be found even amid the rank growth of many-tongued popular opinion, on what lies above and beyond it, has its root in some such feeling as this.

But the peculiarities, hardly, or at least with much reservation, to be called defects, which we have noted, must not serve to obscure for us the brilliancy of George Eliot's genius. In criticising 'Daniel Deronda,' as in dealing with her works generally, we must be understood to use the ordinary epithets of admiration in a totally different sense from that which they must bear in the critiques of the current fiction of the day. In the strictest sense of the word her books are English classics. More perhaps than any other contemporary writings are they penetrated with the pulsations of the keenest and most living thought of our time. To any ordinary novel, the criticisms suggested by a novel of George Eliot are utterly inapplicable, because the sphere in which the ordinary novelist moves is a distinctly lower one, the problems on which he touches belong to a narrower range. His characters are as children beside the grown men and women of George Eliot. The lives he pictures for us are as flimsy play beside the deep-rooted earnestness of work that gives reality to George Eliot's conceptions. The random inconsequence of his views of life are, to hers, like the noisy scintillations of a firework beside the cold and clear steadfastness of a moonlight night. It is with this understanding that we would speak of the author's latest work, 'Daniel Deronda.'

It is little more than a truism to say that in this, as in George Eliot's other works, the chief, almost the entire interest, centres in the development of the individual characters. She never pays much attention to her plots, but here the subordination of plot to character-drawing is carried to an extreme. With one peculiarity, however. The failing here is not so much in the construction, as in the working out of the plot. The opportunities of the original conception seem to be thrown away. At the end of the eighth book we are left with the threads of the story broken off abruptly. Will Gwendolen learn to adjust herself to the new view of duty which she sees so dimly yet, but after whose rest she strives with

such an overpowering eagerness? What will be the issue of Deronda's new crusade—not on the future of the Jews (that would be too much to ask), but on his own character? Will he be steadfast to the enthusiasm in which his whole being has rushed for the time? and what balance will be kept between the enthusiasm bequeathed him by Mordecai and the love to which that enthusiasm was as the complement? What of Rex Gascoigne, and the continuance of his rather premature 'sense of the irrevocableness of his lot'? Surely his is too fine a character to be dismissed with the stunted incompleteness of a stage accessory. Of Hans Meyrick we cannot profess any ardent desire to know much more; but his flimsy witticisms and affectations have surely occupied us too long to end in nothing but smoke. Even of Mrs. Glasher we seem to miss some tidings, to tell us of the effect of her son's changed prospects on that life whose slow withering has been drawn for us with so skilful and so painstaking a hand. With a completed plot, then, we must be content to dispense, but in the subtlety of character-drawing we seem scarcely to notice the want. The chief place we should be inclined to give to the character of Gwendolen Harleth, the spoilt child of Book i. We know her first (in the order of her years, not in that of the book) as the petted daughter of a widow, over whom and whose daughters by a second marriage Gwendolen exercises a capricious but unquestioned tyranny. It is a tyranny which all are disposed to forgive, and to acquiesce in as a part of the order of things, which seems to lack something in completeness so long as the supremacy of a young lady so fitted for an advantageous pose in life is not fully established. Like most wilful people, she has another fault, seldom disjoined from wilfulness—she is thoroughly selfish. Besides herself, she cares for perhaps one other person in the world, and that is her mother; but the affection is not strong enough to prevent Gwendolen's refusing one night to sacrifice a very little of her own warm ease to do something to soothe the pain of that mother when she needed tending. And like most selfish people, she is also cruel: not naturally or thoughtlessly, but from a sort of selfishness that appeared to her-

self to be 'a peculiar sensitiveness which was a mark of her general superiority,' as when she strangled her sister's canary bird in a fit of exasperation at its shrill singing. Still she was not remorseless: 'the thought of that felonious murder often made her wince;' to relieve the wincing she made a show of penance, but she 'made her penances easy,' and she disliked their humiliation. So, by the very force of this dislike, she had gained 'a self-control by which she guarded herself from penitential humiliation.'

Her training had not been a good one. She had passed in her early years a shifting life in one or another foreign town. She had wanted that silent teaching which is thus beautifully described:—

'A human life, I think, should be well rooted in some spot of a native land, where it may get the love of tender kinship for the face of earth, for the labors men go forth to, for the sounds and accents that haunt it, for whatever will give that early home a familiar unmistakable difference amidst the future widening of knowledge: a spot where the definiteness of early memories may be inwrought with affection, and kindly acquaintance with all neighbors, even to the dogs and donkeys, may spread, not by sentimental effort and reflection, but as a sweet habit of the blood. At five years old mortals are not prepared to be citizens of the world, to be stimulated by abstract nouns, to soar above preference into impartiality; and that prejudice in favor of milk with which we blindly begin, is a type of the way body and soul must get nourished at least for a time. The best introduction to astronomy is to think of the mighty heavens as a little lot of stars belonging to one's own homestead. But this blessed persistence in which affection can take root had been wanting in Gwendolen's life.'

But this was not all that happened untowardly for poor Gwendolen's moral training. 'Treated by others 'as if she had been a princess in exile,' with a humble adoration, she found no corrective to the triumph of self-satisfaction. With plain looks, an uneasy and self-conscious sense of disadvantages, and an unsprightly temper, selfishness like that of Gwendolen might either have changed to morbid and brooding discontent, or become inured by hard discipline to accept the inevitable denial of the self-gratification which it would have indulged to the full had it been able. But with Gwendolen, the ever-present homage rendered to her beauty, her ener-

getic animal force, the charm of her presence, combined to fortify her in the deliberate choice of a selfish aim, and in the certainty that she could realize that aim. What wonder then that it should be as she herself tells us? 'I am determined to be happy. . . . I have made up my mind not to let other people interfere with me as they have done.' 'Gwendolen will not rest without having the world at her feet,' is the verdict of her surroundings, as uttered by Miss Merry, the meek governess. What wonder that, with the smell of such incense ever in her nostrils, she should feel herself 'well equipped for the mastery of life'? What wonder that she should have 'a hazy largeness about her on the heights of her young self-exultation'? The secret of her influence George Eliot explains to us in a few terse phrases of the kind that make us wonder at the expressive force which language can be made to bear. What can be more suggestive than the 'certain unusualness about her, a decision of will which made itself felt in her graceful movements and clear unhesitating tones, so that if she came into a room on a rainy day, when everybody else was flaccid, and the use of things in general was not apparent to them, there seemed to be a sudden sufficient reason for keeping up the forms of life'? Her 'spontaneous sense of capability' was not disturbed by any misgivings as to her own ignorance: in what was unknown to her she only felt 'no interest because it was stupid,' and her ignorance was at least saved from 'any painful sense of limpness.'

No prison walls could have enclosed this young wife with sterner necessity than this triple bond of ignorance and selfishness and self-exultation. She intended to win a foremost place in life, and it took no long time till apparently her will had been triumphant. Henleigh Grandcourt, the heir to innumerable estates, to at least a baronetcy and to possibly a peerage, appears on the scene only to fall a victim to that 'unusualness' of charm which she possessed. It is here that the irony of the drama opens, in the unthinking heedlessness that prompts the girl to play with her fate, and to accept the love of Grandcourt as a flattering, well-bred homage, with as little of real feeling as if she had been

acting a part that was expected from her on the stage. The sudden awakening out of this heedlessness, by the snake in the grass that rises with the revelation of Grandcourt's previous entanglement brings the first lesson to Gwendolen. 'The fierceness of maidenhood' that is in her is kindled into anger, just as her selfish aims are frustrated, by the revelation: she breaks away like a startled deer, but the lesson only changes the color of her selfishness, without uprooting it. She found abroad 'a new excitement in gambling, and in imagining herself an empress of luck.' Her experiences had given her only 'a vague impression that in this confused world it signified nothing what any one did so that they amused themselves.' Ignorant selfishness had thus passed in Gwendolen into what was even worse, ignorant and shallow cynicism. But before she returned home she had come under a new influence—the most powerful over all her life for good—which was to give to all experience henceforward a new meaning. She had seen, and though no words had passed, she had been taught by, Deronda. Under that influence selfish error and sin was not made as yet more impossible to her, but that remorse which had ever risen readily in her nature was redoubled in rapidity and in force. Gwendolen had turned her back on what had been an ugly stumble in the mid-career of her triumph, but she came home not only to find the place of the triumph empty, but the hard pressure of degrading conditions in its room. The snakes have gathered round the wheels of the triumphal chariot; but after all, untaught selfishness may well prefer the triumph, even with its canker, to the drudgery of humdrum servitude from which it has been in life-long revolt. The place in the triumph is still vacant; it is again offered, with added grace in the offering; and Gwendolen chooses, once and for all, for ill. Once the choice is made, remorse is soon kindled. The feverish excitement which would hide away the dark spot in her knowledge is roughly startled into facing the stern fact of irreparable wrong-doing: and before the night had closed upon his wedding-day, Grandcourt had found 'that in some form or other the furies had crossed his threshold.' But Gwendolen has to feel not merely remorse for

wrong done, she has also to learn the new experience of a fancied triumph that is only gilded misery. The snakes that had twined about the wheels rear their heads and close in upon her whole vision. Her life is a dumb protest against an iron tyranny that seems to shut her in, helpless in her misery, from an overhanging dread of a vague indefinite worse that seems possible. And now, what had the girlish thoughtlessness of a few months before become?

'Poor Gwendolen was conscious of an uneasy, transforming process—all the old nature shaken to its depths, its hopes spoiled, its pleasures perturbed, but still showing wholeness and strength in the will to reassert itself. After every new shock of humiliation she tried to adjust herself and seize her old supports—proud concealment, trust in new excitements that would make life go by without much thinking; trust in some deed of reparation to nullify her self-blame and shield her from a vague, ever-visiting dread of some horrible calamity; trust in the hardening effect of use and wont that would make her indifferent to her miseries.

'Yes—miseries. This beautiful, healthy young creature, with her two and twenty years and her gratified ambition, no longer felt inclined to kiss her fortunate image in the glass: she looked at it with wonder that she could be so miserable. One belief which had accompanied her through her unmarried life as a self-cajoling superstition, encouraged by the subordination of every one about her—the belief in her own power of domination—was utterly gone. Already, in seven short weeks, which seemed half her life, her husband had gained a mastery which she could no more resist than she could have resisted the benumbing effect from the touch of a torpedo.'

It would hardly be possible to parallel in all fiction the powerful strokes in which the waste spread by bitter sorrow over Gwendolen's full joy of life is drawn. Her whole life is made to wear the aspect of a scorched and withered moor, in which the untrained and vigorous growth of furze and bracken has been blackened into gaunt and shrivelled charcoal by some devouring flame, and has left the features of the earth it covered naked to the view. The superstitious vein that lurked under Gwendolen's brilliant exterior, even in early days, now comes more fully into view. The love for her mother, which counted for so little before, now becomes a sense of craving for rest. Above all, the influence of Deronda, first established in that glance across the gaming-table which tamed

Gwendolen's spirit after its first outburst of defiance, that influence now grows to be, as it were, the religion of poor Gwendolen's life. She has now learned enough of ill, she has her burden of remorse to bear; but a new dread is over her—lest she should become worse still. We see her acting her part as Grandcourt's bride to admiration, maintaining a cold exterior which veils the canker at her heart; we see her at intervals ready to throw herself, even with all the reserve to which her position ties her, upon the one resource on which she has learned to lean. We recognise the one love which might have ripened her whole being to better things in the passionate defence of Deronda against the tooth of scandal, in the humble guise which her pride assumes before him; but we do not know till later all the terrifying promptings that gave intensity to her cry to him for help, that made her life with Grandcourt nothing but a mute despair. The iron that has entered into her soul first prompts the desire to be rid of her husband, even should it be by death; then tempts her to keep in her possession the weapon—'something my fingers longed for among the beautiful toys in the cabinet in my boudoir—small and sharp, like a long willow leaf in a silver sheath.' The evil temptation gathered strength. It grew with the terrible imprisonment of the yacht, when her husband comes to be to her 'like a dangerous serpent ornamentally coiled in her cabin.' It became to her an ever-present, overmastering dread, and her one thought of possible rescue from it, her one struggle to resist it, comes as a suggestion from the memory of Deronda. When she is cramped up with Grandcourt in the sailing boat, then the wishes she dreads shape themselves 'like a cloud of demon faces.' In their midst she had but one resource, 'she clung to the thought of Deronda.' At last the end comes; she sees, not by her own act, 'her wish outside her;' the hated, dreaded husband remained as only the memory of a dead face, seen 'not by any one else—only by me—a dead face—I shall never get away from it.'

The words that reveal all this to us are uttered in confession to Deronda. The mention of the silver-sheathed dagger recalls the curiously simple episode

about Tina, in 'Mr. Gilfil's Love Story,' where Gilfil finds the dagger as it drops from poor Tina's pocket, placed there in preparation for a crime for which she knew not her own incapacity. In Gwendolen's case the dominant wish had gone even further towards its own realisation, but still without incurring anything that Deronda (or the reader, who is bound to judge with Deronda) felt compelled to consider as a conscious or contributory guilt. But with that wish once in shape outside of her, poor Gwendolen's whole horizon changes. The floodgates of feeling are let loose. Remorse is no longer a pain dwelling with an overhanging dread; the dread has passed, and in its place there is only a settled melancholy abiding with her to the end. Remorse and the acts of which it is the fruit are no longer living presences, they remain only the charred fragments that stand out upon the withered waste. But the very energy with which she renounces self, the very ardor with which she reaches after some regeneration of her nature, makes all the more imperious the need of refreshment and solace from one source. Deronda, and the higher life he had taught her to see at a distance, this was her religion. Her strength for long effort in the future, her guidance for the baffling difficulties that future must bring, can come from him and from him alone. At last a love was open to her to which love-making and marriage were as trivialities, the unheeded echoes from the possibilities of a past (not hers) out of which remorse and all that had caused it could be swept away. In her sight nothing now stands between them; and her anguish may freely prompt her to 'the unreflecting openness, nay, the importunate pleading with which she expressed her dependence on him,'—a dependence to criticise which in the light of conventionalities only seems to jar on us as a false note breaking in on a subtly-wrought harmony. 'If she cried towards him, what then? She cried as the child cries whose little feet have fallen backward—cried to be taken by the hand, lest she should lose herself.'

But poor Gwendolen had one more lesson yet to learn—the hardest of them all. Deronda's love was another's, and Gwendolen must struggle without his helping hand for the better life that he

had shown her in the distance. The scene in which the revelation that is to part them comes to her is one of intensest pathos. In the first burst of bitter, passionate forsakenness, we seem to feel the old Gwendolen, of twelve months before, alive and speaking; but before they part she can bring herself to say:—

'You have been very good to me. I have deserved nothing. I will try—try to live. I shall think of you. What good have I been? Only harm. Don't let me be harm to you. It shall be the better for me.'

And that although the 'burthen of that difficult rectitude towards him was a weight her frame tottered under.' How the first months of her struggle fared for her, we may read in her own words—words that seem to carry a strange echo of the old desire to lead, of the old reference to self, although how mightily transformed!

'Do not think of me sorrowfully, on your wedding-day. I have remembered your words, that I may live to be one of the best of women, who make others glad that they were born. I do not yet see how that can be, but you know better than I. If it ever comes true, it will be because you helped me. I only thought of myself, and I made you grieve. It hurts me now to think of your grief. You must not grieve any more for me. It is better—it shall be better with me because I have known you.—GWENDOLEN GRANDCOURT.'

Next to Gwendolen as a finished study we should place the character of Grandcourt. It is far from being so complicated or so varied. It has no shifting phases, no processes, no development. In its fixity it is even statuesque. But what is most remarkable about the study is not only the unswerving rigidity, which stands so utterly in contrast with the ordinary conception of the polite villain in fiction, as a confused compound of incompatibilities—not only the powerful traits which make Grandcourt's a character that would wield a sway over other minds than that of the school-girl, to whom the gentlemanly reprobate is a person so full of charm: what gives the subtler coloring to the picture is the underlying irony by which the utter contemptibleness of his blind self-love is shown in contrast with the thin veneer of surface sway which that self-love is able to achieve. The influence of his calm exterior, of his fixity of purpose unmoved by a single wavering of sympathy or of kindliness, of

what we are compelled to call his freedom from common pettinesses or weaknesses—this would undoubtedly go a certain way to making him a leader among men. 'He had remarkable physical courage, and was proud of it, or rather he had a great contempt for the coarser, bulkier men who generally had less.' We can understand the feeling of Gwendolen, that to resist him 'was to act like a stupid animal unable to measure results.' We acquiesce in the verdict of the author that 'Grandcourt within his own sphere of interest showed some of the qualities which have entered into triumphal policy of the widest continental sort.' We understand how, 'if this white-handed man with the perpendicular profile had been sent to govern a difficult colony, he might have won reputation among his contemporaries.' But the superficial force of his character only serves to bring out its utter littleness in the face of wider issues and of higher aims. How despicable appears his blind self-adoration! 'He had all his life had reason to take a flattering view of his own attractiveness, and to place himself in fine antithesis to the men who, he saw at once, must be revolting to a woman of taste. He had no idea of a moral repulsion.' How poor is his inverted conceit, which, affecting to despise, really craved for a circle of admirers before whom he might air his fancied superiority!

'It is true that Grandcourt went about with the sense that he did not care a languid curse for any one's admiration; but this state of not caring, just as much as desire, required its related object—namely, a world of admiring or envying spectators; for if you are fond of looking stonily at smiling persons, the persons must be there, and they must smile.'

And at last, just before his fancied sway is to be snapped so lightly, how much of tragic irony is there in his blindness to the seething rebellion that was all but bursting through his rule!

'His soul was garrisoned against presentiments and fears: he had the courage and confidence that belong to domination, and he was at that moment feeling perfectly satisfied that he held his wife with bit and bridle. By the time they had been married a year she would cease to be restive.'

Throughout the whole book there are few more skilful touches than those which draw the contrast between Grand-

court's importance in his own eyes and those of the circle round him, and the narrowness of the horizon, moral and mental, on which he looks out with those lizard eyes of his.

The character of Daniel Deronda, which to many—we should fancy also to the author—may seem the chief feature of the book, appears to us distinctly inferior, as a picture, to either of the two we have considered. Unlike them, he belongs to that class of George Eliot's creations which seem to lack naturalness, from the absence of an appeal to common sympathy. From first to last, we confess to missing in Daniel Deronda something of real vitality. He serves as the link between two distinct sides of the story—the fortunes of Gwendolen, and the enthusiasm for a restored Judaic nationality which gives an animating principle to Deronda, Mordecai, and Mirah. Perhaps it may be the unfamiliar region where this enthusiasm dwells that blunts us to some of the living force of Deronda's character; but we seem to feel not only a difficulty in following him to this misty region of enthusiastic endeavor, but also some want of spontaneity and natural freedom of affection in his relation to the other surroundings of his life. He speaks with a certain modishness of age, and we find it more easy to sympathise with Gwendolen in her accepting him 'without the aid of sacred ceremony or a costume, as a priest,' than to recognise in him what she recognised, 'the same level of temptation with the higher motive present as a fuller force,' and 'not a mere residue from weary experience.'

But this apparent shadowiness of motive, this lack of natural sympathy and young spontaneity in Deronda, must not blind us to the delicate drawing of his character. We must see each step by which that character is built up before we allow ourselves to doubt the efficacy of the motive to enthusiasm which comes to change his whole life. We have the boy, with his Jewish origin (and to inherited possibilities George Eliot attributes much) giving a certain bent to his disposition; with large affections, that cling like ivy round what lies closest to him, and that make it at last a sort of wrench to learn the 'truth as to his parentage, which leaves his adopted father

without blame, but at the same time breaks the natural bond between them, in which Deronda had before believed. His intelligence is wide and keen beyond his years; at least we are bound to believe so on the author's word, though the paradox on Caliban, which is almost the only fragment of Deronda's conversation on ordinary topics vouchsafed to us, seems to repeat far more truly the nauseous flippancy characteristic of the youthful don than any of the utterances of young Clintock on the subject of croquet, which are represented as more typical of that species. He has been surrounded by all that could bring home the past to his imagination (what these surroundings were we learn in Gwendolen's visit to Topping Abbey, which had been Deronda's home), and his imagination is so ardent as to give to its pictures the force of reality. He has lived in painful uncertainty about his birth, and this uncertainty has created for him a dreary moral isolation, fenced only against bitterness or self-willed discontent. The isolation had only made the outgoing of his sympathy more quick, and his ready sympathy for the wronged had stirred in him a deep capacity for enthusiastic partisanship. The want of a duty marked out by birthright created for him no wayward sense of irresponsibility, but rather an inclination 'to complain that he was robbed of this half of birthright' in sharp duty. Over all these mingled traits there is the brooding irresolution that comes from lack of a strong incentive—the incentive of mere personal ambition being powerless for Deronda, and the incentive of necessity being absent. To such a nature there came the first powerful outgoing of sympathy in his rescue of Mirah, the poor Jewish songstress, from a self-sought death—a sympathy from which there is to Deronda but one step to love. But that love is shut away from sight, partly as a thing impossible to his sense of honor as the girl's protector, partly because it would involve apparently a breach with the associations of her race, which have to Mirah the force of a religion. It is at this point in his life that Deronda meets Gwendolen, and then is formed between them the bond, at first hardly perceptible, which is to deepen, on Gwendolen's side, into intensity. To

Deronda the bond becomes ever more sharply distinguished from one of love; and it wears the appearance of an episode to the wider range that is opening for him, to the revelation whose gradual unfolding seems to explain all the mysteries of his life, and to bring content to all his higher cravings. In Mordecai, the consumptive Jew, whose passion centres in the hope of a restored nationality for his race, there comes the first call to enthusiasm for Deronda. The call seems to be like an echo to the longings that his life and its surroundings have prompted, and he is prepared to answer it even before all its bearings on himself is seen. But when Mordecai's brotherhood to Mirah opens a new relation between Deronda's knighthood and this possible enthusiasm, and still more when the revelation of his own Jewish birth gives to that enthusiasm the super-added force of an inherited duty, Deronda can hesitate no longer. Then it is that for Deronda, in the words of Coleridge that serve as a motto to the chapter wherein his love reveals itself to Mirah,—

'All thoughts, all passions, all delights,
Whatever stirs this mortal frame,
All are but ministers of love,
And feed his sacred flame.'

The thoughts that have been working in him, and battling for an outlet in action, 'the secret passionate longing never yet allowed to grow into a hope,' the delight that Mirah's presence has been to him—all these come with a great rush into his life, and give it as little sense of wavering as there is in the ever-flowing volume of a mighty river. The setting in which we find Deronda's character may appear unnatural; we may grumble a little at the surface sheen of priggishness which it wears; we may feel a sense of mistiness or artificiality in the enthusiasm which comes to stir him; but there can be no doubt as to the grandeur of the moral foundations on which that character is built, or as to the depth and subtlety of the analysis in which its development is traced.

Of the other characters in the book, two at least (those of Mordecai and of Mirah) would require more space than is left to us for their full analysis. But, subtle as they are, fervid as is the poetry that breathes through the speeches of Mordecai, and fine as is the fibre of

Mirah's nature, we are left by them, on the whole, unsatisfied. The picture of Mordecai, lonely but for the companionship of his passionate enthusiasm, pouring the utterances of his heart into the poems that he tries to print on the heedless tongue of the young Jacob Cohen; wandering to the bridge to watch the sunset, which was, he tells Deronda, 'always what I loved best: it has sunk into me and dwelt with me—fading, slowly fading: it was my own decline: it paused—it waited, till at last it brought me my new life—my new self—who will live when this breath is all breathed out'—this picture is a piece of exquisite description, but does it give us a real man, and not rather an abstraction? With Mirah we have one piece of passionate human feeling when she suspects a tie of love between Gwendolen and Deronda, and when she found that the reliance which had lain darkly within her 'was now burning itself into sight as disappointment and jealousy;' when it was 'as if her soul had been steeped in poisonous passion by forgotten dreams of deep sleep, and now flamed out in this unaccountable misery.' But on the whole her nature seems, however, finely strung, to have less even than Gwendolen's of that latent force and dignity which would make Deronda's love for her all that such love might have been, and not merely the product of chance contact, with a supposed accompaniment of union in aim and duty. After all, where, we may ask, is the identity between the Judaism of Mirah, who is fast bound to the little observances of her nation's religion and to a strict reverence for its customs, and the enthusiasm of Deronda, which is stirred by, and aims

at, a mere political ideal, in which such narrowing observances can have no part or share? Which was greater, that love should have its impulse checked and controlled in obedience to the exigencies of national kinship, or that its almighty power should have borne down all hindrances of race, and rendered a proud obedience to its own dictates, and to these alone? As before in 'The Spanish Gipsy,' so now in 'Daniel Deronda,' George Eliot has shown what is the answer she would give; but the answer of humanity in all ages may still be another.

The prominent characters in 'Daniel Deronda' are so full of meaning, that they perhaps render the byplay of incident or humor less full than in most of George Eliot's novels. Not that these are by any means meagre. The loves of Klesmer and Miss Arrowpoint, and the useful utterances of the former against the arrogance of amateurs; the manly resolution of Rex Gascoigne; the toylike household of the Meyricks (who have more than a tinge of conceit and affectation in their oddities); the vigorous give-and-take of the artisans' discussion club at the 'Hand and Banner,'—all these are alive with marks of a genius to which it would not be easy to find many parallels out of George Eliot's own works. At these, however, we do no more than glance: their fuller acquaintance will come incidentally to those who go to this novel to seek, what they will there most assuredly find, a moral teaching which, within its own range, is of the very highest, and a spiritual insight which, within the possibilities of mere human vision, is of the very deepest.—*British Quarterly Review.*

THE TWO CHANCELLORS.

PRINCE GORTSCHAKOFF AND PRINCE BISMARCK.

THIS is a most interesting and valuable book.* Its different chapters appeared in successive numbers of the 'Revue des

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Deux Mondes' in 1875, and, translated by Mrs. Tait, now appear in the form of a separate volume. They are written by M. Julian Klaczko, an ex-deputy of the Parliament of Vienna, who in 1871 retired from politics, but who, nevertheless, quotes in this volume only such documents and dispatches as have hitherto, by fair means or by foul, found their

way before the public eye, rightly deeming himself "bound by the obligations laid upon him by professional secrecy, and by the elementary rules of state service." The object is to trace out the workings and the results of a ten years' partnership between the two famous chancellors of Russia and Germany, Prince Gortschakoff and Prince Bismarck; and these are delineated with considerable artistic power, and in a manner which betokens considerable political insight, and an intimate acquaintance with the diplomatic world. The momentous partnership or understanding between these powerful statesmen, to which is traced the downfall of Austria and France, the unification of Germany, the eclipse of Europe, and the quiescence of Russia, is said to have lasted from the occasion of the Schleswig-Holstein question down to the Emperor William's journey to Russia in the spring of 1873 to pay his debt of gratitude to the Czar. M. Klaczko approaches the recital of these marvellous events, if to some extent from an Austrian, before all things from a European, point of view. "Taking a broad view," he exclaims, "it is in truth a matter of congratulation that the sceptre of the West has slipped from the hands of a turbulent volcanic nation, always engaged in some propaganda, now Jacobin, now Ultramontane, but ever revolutionary, to fall into the grasp of the most orderly, most hierarchical, and best disciplined state in Europe." Sadowa and Sedan were Protestant victories over the two chief Catholic Powers, fitly followed by the struggle into which Prince Bismarck has plunged against the Vatican. But upon the part which Russia has played during this portion of European history M. Klaczko is remarkably severe. He traces it entirely to a policy of spite against Austria for imaginary wrongs during the Crimean War—against France for its interference with regard to Poland, to a policy which was totally opposed to the traditions of Russian diplomacy, which has substituted along the whole line of frontier, in place of "a purely and exclusively defensive combination," in which Russia had the paramount influence, a gigantic military power, ambitious, full of enterprise, and obliged by its very position to undertake the championship of what are called

"Western interests." He declares that the same Power which struck down Austria at Sadowa and France at Sedan, could at will deal Russia a mortal blow through the gates of Poland; and that a proposal to do so was warmly discussed in 1871 by "a group of Hungarian statesmen supposed to be to some considerable extent in Prince Bismarck's confidence." He points to the views held by Prussia in 1863 as to the left bank of the Vistula, "the natural frontier," and argues that Teuton aspirations are ever on the increase in Courland and Livonia. The 'grateful disposition of the Emperor William may influence destiny for a time; yet even he is capable of resigning himself, with grief in his heart and tears in his eyes, to a sanguinary sacrifice, when either the voice of Germany, or his mission from on high, may summon him to arms.

M. Klaczko insists that whatever Europe may have gained by the rise of Germany, Russia has lost in security, power, and relative influence, by her persistent support of Prussian policy. Napoleon's loss of his throne is traced to the short-sighted policy and confused ideas which led him to urge Prussia forward in her aggressive path after having thrown up the cause of Denmark from a feeling of ill-temper against England. On the other hand, Prince Gortschakoff, although he made a skilful use of the good-will of France to restore Russia to her old ascendancy within four years of the treaty of 1856, nevertheless refused, from the motives here attributed to him of rancor and ill-nature, to entertain the idea of any alliance but that of Prussia; actively aided that ally in wreaking his vengeance on France and Austria; rejected in 1867 ample concessions offered by both those Powers; refused in 1871 to take the initiative in the work of peace, though urged thereto by both Austria and England. The recent conquests in Asia are, it is urged, wholly inadequate as a compensation, since they are of doubtful value, and at the best are embarrassing possessions, and Russian hopes on the Bosphorus are but shadowy contingencies. A vague presentiment is declared to have already taken possession of the Russian public, conscious that the ancient traditions of the empire have been set aside, that the

balance of power between Austria and Prussia is gone, that the friendship of the secondary states has disappeared, that the work of revolution and annexation has obliterated the treaties and public law of Europe. It is clear, as has been constantly urged during the progress of the recent phase of the Eastern question, that Russia is far weaker, relatively to the rest of Europe, than she was twenty years ago, and that a policy of single-handed aggression no longer lies within her power.

Prince Gortschakoff, born in 1798, the present Chancellor of the Russian Empire, was initiated into the language of Voltaire by the brother of Marat, the infamous conventionalist. Of varied classical acquirements, he was the co-disciple, and remained the steadfast friend, of Pouchkine, the great national poet, who foretold his splendid destinies, hailing him as "Fortune's favored son." The favors, however, were tardily conferred; for the future chief, although at an early age he entered the Foreign Office, and became attached to the suite of Count Nesselrode from the time of the Laybach and Verona Congresses, continued to fill a secondary appointment till he was over fifty years of age. He first attracted the attention of the Emperor Nicholas as plenipotentiary at Stuttgart, where, "by dint of skill and dexterity, he succeeded in establishing the Grand Duchess Olga (the daughter of Nicholas) in the royal family of Würtemberg;" and then remained for some years longer at his post to be her guide and counsellor in her adopted country. He was still at Stuttgart when the Parliament of Frankfurt, anticipating the work of 1870, constituted a German empire, to the exclusion of Austria, offering the crown to the King of Prussia. The King of Würtemberg refused to submit; and in 1850 the German Confederation was re-established on the old compact of Vienna, Prince Gortschakoff being appointed the representative of the Russian Court at the Diet of Frankfurt. Nicholas at that time was, so to speak, Chief Justice of Europe, the champion of Conservatism amidst States which had been devastated by the revolutionary storms of 1848. He had protected Denmark against Germany; he had crushed the Hungarian insurrection

against the Austrian Government; he had largely contributed to re-establish the German Confederation on its old basis, that combination which Prince Gortschakoff has subsequently eulogised as "purely and exclusively defensive."

Bismarck, born in 1815, could hardly, with all the advantages of the University of Göttingen, compete in point of classical learning with Gortschakoff; and for twenty years it was a serious question with the more formal and pedantic Germans whether the hero of Sadowa had ever passed his Government examination. His early tastes had led him to hunting, riding, swimming, gymnastics, and duels; although he possesses "a very ample knowledge of his Bible, his Shakespeare, his Goethe, and his Schiller." Though neither a writer nor an orator, his obscure and confused style is often lit up by lifelike and original expressions, "lightning-like thoughts, powerful and unforeseen imagery, words which strike and penetrate and remain indelibly engraven." He could never bow his neck to scholarly tasks, nor endure the regular work of an office, or of a soldier's life. His first ten or twelve years were filled with miscarried schemes of every description. He began life as the resolute adversary of modern ideas, of Prussian Liberalism, combating the two great national fancies of the party—viz., the deliverance of Schleswig-Holstein and the unity of Germany. He denounced the former as "an eminently iniquitous, frivolous, disastrous, and revolutionary enterprise;" the latter in the name of justice and patriotism. The humiliation of Olmütz occurred in 1850; and the sole orator who arose in the Prussian Assembly to defend Prussian subservience to the house of Hapsburg was Bismarck himself. He was convinced that Austria was a German power in every sense of the word, and that Prussia should submit to her, in order to oppose a united front to a menacing democracy. The partisan of Austria was immediately appointed Prussian plenipotentiary to the German Confederation, a post which he held for eight years (1851-59). The petty manœuvring and puny struggles for influence, the tittle-tattle and small incidents by which he was surrounded, irritated and exasperated him; his

contempt for the Bund increased year by year; and in 1858 he almost decided upon giving up his diplomatic career.

The Eastern question burst upon Europe whilst two men, who were on the eve of filling their large place in the eyes of the world, were busied at Frankfurt. Every one knows that during the progress of that momentous strife, the fidelity of Frederick William IV. to his brother-in-law, the Czar Nicholas, was proof against everything. The other members of the Bund were equally sympathetic; and it is interesting to find that the future chancellors of the two countries followed the example of their respective sovereigns in the matter of personal and political intimacy of friendship. Bismarck's disgust, however, at the neutrality of the German Confederation, inspired him with unmitigated contempt for the Bund. He became convinced "in his inmost soul of its utter nullity;" and, as our author relates, while seated at the green table in the palace of Taxis, exhibited his contempt for the proceedings.

In 1854 the two friends were separated by the appointment of Prince Gortschakoff as envoy to the court of Vienna—the marshal's baton in the diplomatic career of Russia. The relations of Russia and Austria during and arising out of the Crimean war were far from satisfactory. The Czar held that, after the suppression of the Hungarian insurrection, Austria was bound to him by the ties of gratitude, firmly restrained by political leading-strings. But whilst Prussia and every state in the Bund denounced the Allies and the Christian defence of the Crescent, Austria, on the other hand, looking to her position as a Danubian, Slavonic, and Catholic Power, was disinclined to carry her gratitude for recent services to the length of abnegating her position as a great Power, and considered that the success of Russian policy would have led to that result. She owed Russia much, but at least something less than self-immolation; and when all things were considered, the suppression of the Hungarian revolt was to the Czar the extinction of a conflagration in a neighbor's house. Count Beust's policy, and the motives for it, are clearly brought out in this volume. He opposed the Czar by upholding the principle of

Ottoman independence: he nevertheless favored Russia in the negotiations to an extent which exasperated both Napoleon and Lord Palmerston; he closed the gates of Poland to the Allies; he compelled the Allies to distant operations; and he facilitated the conclusion of peace on terms which saved the dignity of the new Emperor. After the war was over, Prince Gortschakoff succeeded to the post vacated by Count Nesselrode; and, as this volume is intended to show, he shared to the utmost the bitter feelings, the rancorous animosity, with which every Russian regarded what was called the immense ingratitude of Austria. Three years afterwards he was joined at St. Petersburg by the friend whose intimacy he had cultivated on the banks of the Main. Bismarck, in April 1859, was made Prussian envoy at the Russian Court. His feelings towards Austria had undergone an entire reaction from the time when he upheld the Hapsburg in the Prussian Assembly, after the humiliation of Olmütz. Austria had outweighed him in everything at Frankfurt, in spite of Prussian sympathy and community of ideas with the secondary States. "These States," he wrote, "after every oscillation, return with all the persistence of the magnetised needle to the same point of attraction." Summing up the teachings of his experience at Frankfurt, he declared, "I see a vice in our federal relations that must sooner or later be extirpated by *ferro et igne*;" the first known version of the famous "blood and iron."

The growth of international relations (1856–59) during the period which intervened between the Crimean and the Austro-French wars, is vividly described by M. Klaczko. Prince Gortschakoff had acceded to power in Russia, with a new and untried emperor, strongly supported by the popular voice, resolved upon breaking with the traditional policy of the Czars in regard at least to the secondary States (whose sympathy had been of so little value), animated with the strongest hatred to Austria. Napoleon, dreaming of Italian unity, was plotting his enterprise against Austria; he insisted on Prussia being restored to that rank in Europe from which its recent conduct had seemed to degrade it; he eagerly sought the friendship of Russia. The able manner in which Prince

Gortschakoff availed himself of this growing cordiality to reinstate Russia in its old post of European influence, without suffering himself to be used by the French Emperor, is skilfully depicted. Napoleon fought his battles and annexed his provinces; the Anglo-French Alliance came to an end; the Peace of Villafranca was inspired by fear of German intervention. Russia shortly afterwards raised the question of the condition of the Christians in the East; and the Emperor Alexander met the German sovereigns at Warsaw, once more to give the word of command, assume the front rank in the eyes of Europe, and take the lead in demanding explanations from the Tuileries. If the close of the war in Italy found Napoleon at the zenith of his power and glory, it also marks the commencement of his steady decline. In his schemes and his diplomacy he had destroyed the Western alliance, and played incessantly into the hands of Prince Gortschakoff. Italy felt little gratitude to the author of the Peace of Villafranca; but Russia stood forth as the conservator of public rights, profiting by events which it did not create, in order to wreak vengeance and win back *prestige*.

The career of M. de Bismarck, the *frondeur* diplomatist at St. Petersburg, is then sketched, and the successful mode in which he cultivated the goodwill of Russian society and government. While Gortschakoff was lending himself to all those diplomatic subtleties which, according to Napoleon's wishes, were to force Austria to declare war, Bismarck was eager for a rupture with the Bund. Napoleon, secure in his prosperity, had insisted that a high destiny awaited Prussia, and that Germany expected her to fulfil it. He from the first insisted upon the advantages which would accrue to the Hohenzollerns from a rupture with Austria. But at Berlin there was a strange weakness in favor of Austria; the Prince Regent was contented with visions of purely moral conquests. The mobilisation of the Federal armies was under consideration; the Berlin Cabinet remonstrated with Cavour; and Bismarck fell seriously ill with vexation and alarm. Count Cavour replied with something of prophetic sagacity, at all events in words which must have delighted the future conqueror at Sadowa, that "Prussia

would one day be grateful to Piedmont for the example the latter had just set her." The French journals also were loud in the praises of the Piedmontese mission of the house of Hohenzollern. It was at this time that there arose disquieting rumors as to an alliance between Russia, Prussia, and France. Authoritative publications spoke of "great agglomerations of States" to be effected by the Roman, Slavonic, and Germanic races; and to a triple alliance of three universal monarchies "whose distinguishing features would be not only the three principal races of the European system, but also its three great Christian Churches." Lord Palmerston declared in Parliament that the situation was pregnant with at least half-a-dozen respectable wars. The gigantic combinations which Napoleon shadowed forth, and the great destinies which he was perpetually thrusting upon Prussia, impelled the King to energetic resolutions. Accordingly, a vigorous man was required. All eyes were turned to M. de Bismarck; but society was disconcerted by learning that the great man was only appointed to be ambassador at Paris. He stayed there, however, only two months; took the measure of Napoleon, whom, contrary to the general opinion of the time, he confidentially described as "the embodiment of misunderstood incapacity;" insisted with the influential men of the Government that France should acquiesce in Prussia's absorption of the smaller Germanic States with a view to her obtaining a desirable ally, or as another alternative, in her turn enlarging her own territory in the direction of Belgium. Having expounded his future political plans, he returned to Berlin to form, as he expressed it, "a lid for the Government saucepan." His farewell speech to France appears to have been, "Liberalism is but a child easily brought to reason; but revolution is a power, and you must know how to use it."

Bismarck acceded to the Prussian Ministry in September 1862, bent upon the aggrandisement, "the rounding-off," of the monarchy of Frederick II., foreseeing from the first that Austria would always be his resolute adversary. He trusted that, with careful management, Russia and France might be brought to favor, or, at least, not to interfere with

his designs; as regards England, he did not trouble himself. "England has for many a year," said he, "been erased from all my political calculations: and do you know since when I began to reckon without her? Since the day on which she renounced of her own free will her right to the Ionian Islands. A Power which ceases to take, and begins to give up, is an exhausted Power." M. Klaczko remarks that the conviction that proud Albion would quietly submit to be slighted was more than justified during the Danish campaign. Bismarck soon resolved upon his course. He trusted himself thoroughly to the friendship of Prince Gortschakoff. He set himself to outwit Napoleon, whose purpose was vacillating, and who, in vaguely striving to accomplish the welfare of humanity, was fast endangering that of France. Though the design of transforming a "purely defensive" confederation into a great military and aggressive kingdom was hostile to the interests and traditions both of Russia and of France, by a fortunate turn in events those Powers never united to resist it. For at the very commencement of Bismarck's Ministry the Polish question arose, and in the course which it took, immediately estranged the Emperor Alexander and Napoleon, reawakened in St. Petersburg the old rancorous feelings against Vienna, and enabled the Prussian King to draw close his alliance with the Czar, while yet maintaining friendly relations with Napoleon. This drama on the banks of the Vistula, which lasted for two years, ended in a final catastrophe in January 1863. The populace at Warsaw knelt before the palace of the King's lieutenant, "holding nothing in their hands but the symbol of Christ's crucifixion, and asking for nothing but their God and their country." A reference was made to St. Petersburg, and there arose a sincere desire to conciliate Poland. The Emperor sent his brother to reform and administer the government, and a moderate independence was granted. But the demagogues of Europe speedily introduced their mysterious organisation and their violent measures. Europe encouraged the folly of the Poles. From the Palais-Royal came the advice "to throw away their Catholic mummies and up with the barricades;" from

Earl Russell came a recommendation of parliamentary institutions for Poland, and for an extension of the same to the whole of Russia; from Count Rechberg, "that fatal Minister then at the head of foreign affairs in Vienna," came encouragement, Galicia becoming in effect the refuge armory and centre for supplies for the Polish insurgents. The Emperor of the French at first declined to encourage hopes which he had no means of satisfying; but at last, urged on by the language of Lord Palmerston, the attitude of Austria, and finally by Bismarck's military convention with Russia, he addressed a great European remonstrance to the Czar, which naturally stimulated the insurrection, and deeply wounded the pride of Russia; and the Czar thereupon "undertook against the Polish nation a work of methodical and implacable extirpation." As M. Klaczko observes, Prince Gortschakoff received all the honors of the melancholy campaign; while the profits were absorbed by M. de Bismarck, who used them to construct a secure and solid foundation for his future labors. At all events, M. de Klaczko regards as immense the benefits which accrued to Bismarck through the Polish insurrection in consolidating his friendship with Russia, and the estrangement of the latter country from both France and Austria. It appears, however, that at that time Bismarck himself doubted the capacity of the Russian Empire to quell the Polish insurrection without Prussian assistance, and even contemplated rectifying the Prussian frontier by the absorption of Poland. The first blow of Bismarck for the aggrandisement of Prussia might, if fortune had so willed it, have been struck upon the banks of the Vistula.

Circumstances, however, took him to the banks of the Elbe. A question of the Duchies had been opened in 1859, in consequence of the events in Italy, and had grown to importance since Lord John Russell's Gotha despatch. The magnificent harbor of Kiel was a prize worth playing for; and Bismarck's antagonist in regard to the Duchies was Earl Russell, who was easily convinced that the German covetousness proceeded from Austria and the secondary States, and that Prussia was eager to restrain it. The diet of Frankfurt decreed a federal

execution in Holstein. Denmark accepted English mediation on a promise made by Bismarck to Great Britain that he would prevent this execution; Earl Russell was delighted at the influence of the attitude assumed by England; but in three weeks Bismarck withdrew his assistance. In the interval Lord Russell, overjoyed at Bismarck's co-operation, had sacrificed to him the Polish question with Russia, and exasperated Napoleon by his opposition to a European congress, and by leaving him in the lurch with regard to Denmark and Russia. The field was now clear for Count Bismarck, who was now no longer satisfied with a federal execution in Holstein, but managed to deprive the King of Denmark first of Holstein and then of Schleswig, by a series of manœuvres, partly diplomatic and partly military, in which he was constantly aided and abetted by his Russian ally. Yet, as M. Klaczko observes, "to Russia more than to any other Power in Europe was it of importance to preserve the freedom of the Baltic, and to prevent the harbor of Kiel from falling into the hands of the Germans; it was also of more importance to her than to any other to remember that the people of Courland and Livonia spoke a much purer and harmonious German than the people of Schleswig."

The Polish and Danish questions were the prelude to the decisive wars with Austria and France, and are minutely referred to by M. Klaczko, since they influenced the international relations of Europe in a manner favorable to Bismarck's schemes. They completed the estrangement between France and England, which the annexation of Savoy and Nice had commenced; they also cemented the friendship between Gortschakoff and Bismarck; while they produced an enduring rancor on the part of the Russian Chancellor towards Austria and France. But while the sulks of Alexander Mikhailovitch are described as nearly as fatal to Europe as the reveries of Napoleon III., Count Bismarck alone was distinguished for his clear conception of the ends which he desired to accomplish, and for the unrelenting directness and vigor with which he strove for their accomplishment.

This book describes Count Bismarck as eager above all things to secure the

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Russian Chancellor as a principal card in his game, but equally determined not to change rôles with him, and to become a card in the game of his friend. But at the outset, in the scheme of consolidating Germany, his principal aim was to bend the misunderstood incapacity of the powerful Napoleon to his purposes. And, according to the narration here given, the French Emperor fell an easy victim. The whole world at that time believed in the immense superiority of the Austrian army over that Prussian *Landwehr* which for half a century had not smelt powder. Foiled with regard to Denmark and Poland, isolated in Europe on account of his dealings with England, Austria, and Russia, Napoleon was before all things bent on doing something for Italy. He was not in a position to accept diplomatic defeat, any more than he could re-enter Paris after Sedan. M. de Bismarck went to Paris, descanted upon the advantages which would accrue to Italy from the impending duel between Austria and Prussia—the benefit which it would be to Napoleon if Prussia, better outlined and more powerful, became the unfailing ally of France. A Prusso-mania took possession of the Bonapartists; and M. Benedetti, M. de la Valetta, and General La Marmora, were the exponents of the new policy which completely upset the antiquated ideas of M. Drouyn de Lhuys.

Relying on this state of French opinion, the Prussian Minister, who had previously, in concert with Austria, declared in favor of the Duke of Augustenburg's title to the Duchies of Schleswig and Holstein, now declared that the King of Denmark alone was entitled, adding that the King had abandoned them to Austria and Prussia, who accordingly were capable of disposing of them without reference to the Bund. He then demanded of the Emperor Francis Joseph that he should give up his share in the conquest for a cash payment. A provisional arrangement was made at Gastein shortly afterwards, which served to show how little disposed either France or England was to interfere. The latter country was changing its Government, and preparing a campaign of parliamentary reform; the rulers of the former trembled at the thought of their future ally being exposed to certain defeat from

the enemy of Italy, of progress, and of France. The Italian and French press applauded the "Piedmontese mission" of the Hohenzollerns, and cherished hopes of a "Germany united by means of a Prussian needle;" Napoleon himself was eager for a reconstructed Prussia as a Protestant rival to Catholic Austria, and a useful counterpoise to Russia. With that view he was eagerly encouraging Prussia to declare war, reserving to himself a policy of "attentive neutrality," convinced that whatever might be the fortune of the war, he could always interfere with effect in favor of peace and the equilibrium of Europe. On the other hand, Bismarck, who saw through this game, and was unwilling to embark in a war of which Napoleon could dictate the conclusion and the terms of peace, was anxious to obtain a written promise of absolute neutrality. This Bismarck failed to obtain. Napoleon was anxious that Italy should complete her unity, and that Prussia should afford her the opportunity of doing so, and he was ready to respect the national aspirations of Germany. He was equally willing to complete French unity, and was full of visionary schemes to promote the cause of progress and humanity. But no definite arrangement was made, either as to neutrality by France, or as to guarantees by Prussia in the improbable event of her issuing victorious from the strife. Under those circumstances the Prussian Minister felt that the blow must be struck, and struck quickly and decisively, before Napoleon had time to intervene. The marvel of the whole achievement was, that Count Bismarck, up to that time regarded as a sort of mad diplomatist, was able to carry the pious Hohenzollern into this fratricidal war, as all persons declared it, and, with the aid of the comparatively inexperienced Moltké and Von Roon, strike down Austria in a week.

This war was by far the most perilous adventure to which the emotional mind of the Prussian King had ever been fixed. Bismarck knew that he risked death upon the scaffold in case of failure; only Napoleon would have traced any parallel between such an enterprise and the schemes of Count Cavour. There was no counterpart to Italian misrule to be found in the constitutional and republican States which formed the Bund, and which

already boasted as much liberty and order as Prussia possessed or could possibly confer. They denounced beforehand the "fatal policy" of the Berlin Cabinet, and were the immediate victims of its success. Italy was Prussia's real ally in this business. A treaty had been concluded between the two countries in April 1866; and while the Prussian King appeared in the unwonted character of Victor Emmanuel's ally, the Hohenzollern as the patron of successful revolution and of Garibaldi's friend, the Prussian Minister was already in communication with Mazzini and the Magyar chiefs, determined, if the worst came to the worst, to fight his enemy with revolutions, and be ready, if France should intervene and Italy withdraw, to fall back on Hungarian legions and southern conspirators. The conquest of Germany, however, was achieved. It is clear that Prince Gortschakoff silently but effectively aided his friend, and probably no one rejoiced more heartily than he did at the discomfiture of Austria and the mortification of Napoleon. Italy at this time obtained possession of Venice, and a Hohenzollern prince assumed the government of Roumania; but neither by diplomacy nor arms could Napoleon obtain the smallest compensation. His altered position with regard to Europe was at once manifest to the initiated, if not to the outside public. Before the war, he had declared in a solemn document laid before the Corps Legislatif on the 11th June 1866, that "none of the questions which affect us will be settled without the consent of France." After the war, contrary to the express words of this document, Prussia openly modified the map of Europe to her own exclusive benefit, without reference to France. Austria, so far from being "maintained in her great position in Germany," was excluded from the German Confederation; instead of "a more powerful organisation" being accorded to the secondary States, annexation became the order of the day. But in vain did M. Drouyn de Lhuys urge the establishment of a French army of observation on the eastern frontier; that Prussia, though victorious, was exhausted; that Austria could recall a powerful force from Italy; and that a military demonstration would render

Napoleon the arbiter and master of the situation. The French Emperor hesitated, he was terrified at the prodigious successes of Prussia; the Mexican expedition had weakened his army; and doubtless he felt that the man who gains time gains everything. "Sire," said, according to M. Klaczko, an eminent minister of the German Confederation, "a simple military demonstration on your part may save Europe, and Germany will be eternally grateful to you. If you allow the present opportunity to escape, before another four years will have elapsed you will have to go to war with Prussia, and you will have the whole of Germany against you." But the Bonapartist party clung to the delusion that Prussia and Italy were the true allies of a democratic empire; that "Austrian sympathies" must be suppressed; and that the conquest of Belgium would amply compensate for the unity of Germany. The foundering of Austria was in reality the ruin of Napoleon's dynasty; the unification of Germany was the eclipse of France. Something of this must have dawned on the imperial mind when the conqueror of Sadowa would hear of no territorial reparation which involved a cession to France; alluded vaguely to "other arrangements" which might be made, to something "which might be found in the Palatine," to the annexation of Belgium—to anything, in fact, which was hopeless and unattainable. Not much doubt could have remained when, after much hesitation and apology, M. Benedetti at last presented to Count Bismarck the outline of a secret treaty, abandoning to France the whole of the left bank of the Rhine, without even excepting the stronghold of Mayence. "Very good," said the new master of Europe; "then we shall have war! But do not fail to remind his Majesty the Emperor that, under certain circumstances, such a war might be waged with revolutions, and that in the presence of revolutionary dangers, German dynasties would prove to be built on more solid foundations than that of Napoleon."

The fate of France and of Napoleon's dynasty was in reality sealed very shortly after the successful issue of the war in Germany. What might have happened, if Napoleon had interposed directly after Sadowa, no one can say: he might have

merely anticipated his doom. But what really happened was this;—Bismarck was the new master of Europe, Prince Gortschakoff and Napoleon equally courting his favor and alliance. The friendship of the former was accepted, and General Manteuffel sent to negotiate the terms either of alliance or "understanding" which should subsist between Prussia and Russia. France was bamboozled, over-reached, and betrayed. "Dilatory negotiations," a new term in diplomacy, were prosecuted for her amusement, in which she betrayed to her implacable enemy that policy of "taking tips" (*une politique de pour boire*) which Bismarck scorned. If a Power which had ceased to take and had begun to give up, was deemed by him, rather hastily, to be an exhausted Power, what must have been his idea of a Power which, no longer able to take, stood hat in hand to a powerful rival vainly asking for its grateful acknowledgments? He was ready to sell it the bearskin, well knowing that it would fail to catch or kill the bear; but there his complaisance ended. He would not even allow it to purchase Luxembourg from the King of Holland. He tempted it with Belgium; took an authentic project of a treaty on the subject in M. Benedetti's handwriting, with Napoleon's marginal notes, into his possession: but no sooner was the Peace of Prague concluded with Austria than he was averse to "creating ill-feeling between Prussia and England," and in good time divulged the project to England and the world. But the secret treaty, or project of a treaty, relating to the Rhine, was at once laid before the Southern Confederate States, which, according to the preliminaries of Nikolsburg, were not to be included in the new Confederation governed by Prussia. The triumph of French mediation had been that they should form a restricted union amongst themselves, having solicited and obtained the French Emperor's help for that purpose. But no sooner did Count Bismarck explain to them that so far from the Emperor protecting them, he was seeking an understanding with Prussia at their expense, than they gave way and concluded with him secret offensive and defensive treaties. These were kept rigorously secret; but from the date of the peace with Austria, Bismarck could

rely on the armed co-operation of the whole of Germany, the silent aid of Russia, and the certainty of being able to destroy all hope of English interference. France knew that her alliance had been declined in favor of Russia; but it does not appear that she suspected the magnitude and completion of the precautions which Prussia was taking against her. "That powerful agent of civilisation and progress" which France had done so much to call into a vigorous life, was already plotting her destruction, to wrest from her the admitted supremacy in Europe. What may have been the exact terms of the arrangement which General Manteuffel was commissioned to make with Prince Gortschakoff is not known; but M. Klaczko's observations with regard to it are interesting, for the Eastern question must at all times be largely affected by any understanding between Germany and Russia. It was suspected that another bearskin was being disposed of on the banks of the Neva; but this time "it was a bear of the Balkhan, who had not felt well for some time past, and whom the Emperor Nicholas had declared to be very sick twenty years before."

And during the Eastern troubles both Austria and France made significant advances to the Court of St. Petersburg. The French Cabinet was willing to reopen the whole Eastern question and pacify the East with heroic remedies. Count Beust could not refuse to sympathise with the Christians in Turkey, and to encourage amongst them "a wider development of their privileges, and to promote the establishment of a system of self-government, to be limited only by a tie of vassalage." He actually proposed to revise the Treaty of Paris of 1856 in the sense of assigning a very great *role* to Russia. He wished for a collective interference of the Powers in the affairs of Turkey, and to release the Czar from his Black Sea engagements in order to secure his sincere co-operation. Prince Gortschakoff had declared before the Treaty of Prague that the only value of the Treaty of Paris depended on the agreement existing between the great Powers to see it respected. But Europe had recently shown itself without unity and without public law, and Count Beust wished to re-establish the European

union at least in reference to the affairs of Turkey; and he was willing to sacrifice to this end the Black Sea clauses of the treaty. France wished to dower the Russian Queen of Greece with the island of Crete, and to demand from Turkey the annexation of Thessaly and Epirus. In return, Austria and France desired the assistance of Russia in the menacing complications in the West. Prince Gortschakoff was in raptures; M. Beust, he declared, was inaugurating a new era in the political history of Austria—an era whose views would be liberal and lofty. The French Minister's principles and assurances had a peculiar value, since they emanated from the thoughts of the Emperor Napoleon. But the Prince, notwithstanding the exclusion of Russian interests in the German Confederation, kept close his intimacy with his Prussian friend: he showed no consideration for France in the affair of Luxembourg; he encouraged the violent Slavonic opposition then rife in the empire of the Hapsburgs.

In the face of this manifest duplicity, of the obvious understanding between St. Petersburg and Berlin, Austria and France retired from the East. The "Pan-Slavonic Propaganda" attracted the attention of M. Benedetti, who never failed to urge upon his Government that while Bismarck was free to operate in Germany, Russia was at work in the East and in the Slavonic provinces of Austria. "Mighty projects," says M. Klaczko, "had indeed been cherished on the banks of the Moskva and the Neva during the whole of the feverish and agitated period which separated Sadowa from Sedan." The world was to be divided between Slavonia and Germania. Napoleon himself had declared that "an irresistible power was impelling all nations to form great agglomerations, and to abolish all minor States." The Congress of Moscow followed, Russia seeking to adopt towards the Slaves the same course of action which Prussia had adopted towards the Germans. The Congress and the Cretan insurrection served to keep the Christian populations of Turkey in a state of ferment and of expectation, and appealed directly to the sympathies of the Austrian Slaves. After the Congress was dissolved, a permanent committee under the auspices of a Grand Duke was

appointed to watch over the interests of Slave unity. The Ruthenes, the Czechs, and the Croats of Austria, the Princes of Montenegro and Servia felt its influence. Bulgarian committees were established at Bucharest and other towns on the banks of the Danube to provoke disturbances in Bulgaria, and disorderly agitations took place. But, as M. Klaczko observes, in the period between Sadowa and Sedan, although these disturbances were the subject of numerous and energetic representations by the Cabinets of London, Paris, and Vienna, to Roumania and Greece, the Cabinets of St. Petersburg and Berlin maintained a continuous silence. "By a curious change in earthly matters which must have astonished the Nesselrodes and Kamptz in their celestial abode, the voices of the Western Powers—those of England, France, and Austria—were now denouncing the underhand and revolutionary proceedings of the European demagogues; while Prussia was silent, and Russia denied the fact, or pleaded extenuating circumstances." A conference was held in Paris; Turko-Grecian difficulties were smoothed over; but the universal belief remained that Russia would assume an offensive position in the East as soon as complications arose in the West. In 1869, Fuad Pacha on his deathbed addressed his last political testament to the Sultan, in which he pointed out the approaching inevitable conflict between France and Prussia, declared that the great Ottoman empire was in danger; and concluded, "an internal war in Europe, and a Bismarck in Russia, and the face of the globe would be changed."

The completion of Italian and Germanic unity brought no comfort to the Tuileries. M. Benedetti was the first to perceive the altered position of France; and M. Klaczko pays every honor to the insight and judgment which he displayed in the four years between Sadowa and the Franco-Prussian war. Grossly and painfully deceived as he had been during the negotiations which preceded the war with Austria, he constantly drew the attention of his Government to Count Bismarck's schemes; his propagandism beyond the Main; his intrigues with the revolutionary party in Italy, designed to aid him in fighting Victor Emmanuel as well as Napoleon

with revolutions in case of necessity; his negotiations with Russia through General Manteuffel; his intrigues with General Prim respecting a Hohenzollern candidate to the Spanish throne. Napoleon despatched General Fleury to the Court of Russia; and Bismarck's relations with his Hungarian allies of 1866 showed that he did not contemplate surrendering to Russia all German interests and claims on the shores of the Danube and at the foot of the Balkans. And at the Paris Conference in 1869, the views of the Berlin Cabinet diverged from those of Russia. Convinced that no definite solution could be arrived at without the aid of a united Germany, Count Bismarck did not wish in the then state of the Continent to commit himself with either the friends or the foes of the Sultan. The collapse neither of Turkey nor of Hungary would suit his views; and a struggle in the East might force him to borrow a card in the game of his Russian friend, a change of rôle to which he was at all times strongly opposed. Then, as now, Count Bismarck maintained his own liberty of action, resolved, however, not to pre-engage German forces in an Eastern crisis, but rather to reserve to himself the part which Napoleon ought to have played in the Prusso-Austrian war—the part of umpire of the contest, at whose word the combatants must separate and come to terms. Russian policy, it seems, was to wait; and when the power and public opinion of Europe were paralysed by the tremendous strife which was plainly imminent, to step in and seize its plunder. Prince Gortschakoff no more than the French Emperor dreaded the increase of Prussian power; and, like Napoleon in 1866, he never dreamed of the tremendous victories which Prussia was about to win. Bismarck had secured the co-operation of the Southern States in Germany; Gortschakoff intimated to the Viennese Cabinet that Austria would not be permitted to make common cause with France, and to Denmark that she too must be neutral. England's neutrality was secured by the revelations about Belgium. M. Klaczko declares that the sudden catastrophe of 1870—which of course was hastened by Count Bismarck for his own purposes, though France had all the discredit of it—found Russia not merely in a military sense unprepared.

Its moral influence over the Slave world had received a check since the conference on Greece. It hurried to arms, and might have appeared as an active ally of Prussia in its fear of French successes. As it was, Prince Gortschakoff, at the outset of the war, urged the Emperor Napoleon to be moderate; and probably awaited with patience the opportunities for action in the East. But the Ottoman empire remained unscathed during that intestine struggle which Fuad Pasha had declared would lead to its destruction. M. Klaczko declares that all chances of a Russian crusade in the East melted away in the terrible disasters of France. Russia abandoned the idea of the compulsory unification of the Slaves, and contented itself with the repeal of the Black Sea clauses of the Treaty of Paris. The great object of Prince Gortschakoff was to prevent—and he skilfully succeeded—Europe from interfering between Prussia and France in respect of the terms of peace. The work of 1870 became a mere copy of that of 1860; even as regards the *politique de pour boire*, Count Bismarck again scorned to give tips. "You can take the East," said he, according to M. Klaczko, at St. Petersburg, through his mouth-piece, General Manteuffel, as he had previously told the Emperor Napoleon to take Belgium, making always the same kind offer of what was not his to give—the same gracious gift of dragon-defended fruit. The new Greco-Slave-Roumanian world was as much a dream as Napoleon's conglomeration of States for the advancement of humanity. In the wreck of treaties, and the abrogation of public law, it is satisfactory to find that, in the two quarters of Europe where England held supreme interests, the great military Powers paused in their career of spoliation and conquest.

The ten years' partnership between the two Chancellors, however much it has promoted the aggrandisement of Prussia—however it may tend to preserve the equilibrium of Europe, however little it may have injured England, the destruction of the Black Sea clause being a small matter in comparison with its other more decisive results,—nevertheless has, as far as existing European nations are concerned, set at nought every principle of international justice and good faith.

The singlehanded repudiation of a treaty by Russia without pretext or negotiation or congress, showed the want of good faith, the utter disregard for international obligations which was beginning to displace the public law of Europe. The Continent was powerless while its map was transformed; and we can only hope that the work is complete, and that the growth of conservative principles of law and order may be encouraged, as the waters of revolution, anarchy, and spoliation subside. In two years' time the Eastern question again burst upon Europe; and it was a question of grave importance how the great Powers, with their altered fortunes and changed attitudes to each other, would approach the subject.

If Russia has conquered Tartary, gained the Caucasus and a new world on the shores of the Amoor and the Syr Daria, and resumed her freedom in the Black Sea, on the other hand she has lost Sebastopol, and there is a barrier of autonomous States under the guarantee of Europe between her and Turkey. Germany does not share Prussia's indifference to the East, but demands that her voice should be attended to. Austria, constantly exhorted to "seek her centre of gravity elsewhere than at Vienna," to justify her name of *Ost-reich*, and become in reality an empire of the East, feels that she has a large stake, perhaps a more pressing mission, on the banks of the Danube than she had in 1856; and England, as a great Mediterranean and Eastern Power, has interests in the settlement of Turkey, and the distribution of its provinces, which her formidable fleets are capable of protecting. "I see no Europe!" was the exclamation of M. de Beust, in a celebrated despatch of 1870, as its organised impotence stood unveiled before him. It has been the high mission of Great Britain in the recent troubles to restore to Europe her confidence in herself, to renew the public respect for treaties, to vindicate the collective rights of the great Powers against the pretensions of the Triple Alliance, to enforce that non-intervention in the disorders of an unhappy State to which the Continent is pledged, and to secure to the public voice of Europe the final settlement of those difficulties which are temporarily intrusted to the arbitrament of an un-

impeded struggle. It has been an achievement worthy of a great Conservative Power; and we doubt not that, when the opportunity arrives, the men who have recalled Europe to a sense of public right will know how to attend to the claims of the unfortunate populations which suffer from Ottoman misrule, and in the perpetuation of whose misery and dependence public safety and English prosperity have no sort of interest or stake. To discover a *modus vivendi* between the various races which, with warring creeds and dissimilar institutions, swarm over the south-eastern provinces of Europe, is the problem to be solved, and of which from time to time a temporary solution must be found. The Turks, when all is said on their behalf that can be said, are only one of those

races; and the relations of those turbulent tribes to one another must be to some extent settled by themselves; the final adjustment, in the interests not merely of justice and good government amongst them, but in the interest of the permanent peace and security of Europe, resting with the collective authority of the Powers. To secure a gradual settlement of this kind requires patience and firmness; but the heroic achievements of the last ten years have given all of us a taste for the less dramatic, but more conservative, results which flow from respect for treaties, love of order, and political sympathies, which a keen sense of justice repels from the borderland of mania, and restrains by reason and prudence.—*Blackwood's Magazine*.

ASTRONOMY IN AMERICA.

BY RICHARD A. PROCTOR.

DURING my visits to America in 1873-74 and 1875-76, I was led from time to time to notice with interest the progress and promise of astronomical science in America. My own special purpose in visiting America on these occasions partly brought these matters to my attention. The circumstance that in a country so much more thinly peopled than Great Britain, it should be possible not only to obtain audiences for lectures on such a subject as astronomy, but to obtain more and better and larger audiences by far than could be obtained during a lecture season in England, for any single scientific subject whatever, appeared to me in itself sufficiently remarkable. At a first view this might have been referred simply to the fact that the Americans are a lecture-loving people, preferring the quick and ready method of learning the more striking facts of a subject from a verbal exposition, to close study and application. But I soon perceived that something more than the mere desire for superficial knowledge was in question. The number of persons making close inquiry into the subject was nearly always greater (even in proportion to the much greater audiences), than in England. That still more select section of every audience, the actual workers and observ-

ers, I also found to be correspondingly large; while again and again I met with what in England is certainly very unfrequent—cases, namely, in which persons not engaged professionally in the study or teaching of astronomy had privately worked so zealously and so ingeniously in astronomical research as to have effected original discoveries of considerable interest.

I do not propose, however, to enter here into an account of these experiences of my own. To do so would indeed be a welcome task to me, as enabling me in some degree to express not only my sense of the interest taken by Americans in science, but also my recognition of the unvarying kindness with which I was personally received. At Boston, New York, Philadelphia, Washington, Brooklyn, St. Louis, Cincinnati, Baltimore, Chicago, Columbus, Louisville, Kansas, and Minneapolis, and, in fact, at all the cities and towns which I visited, I received a generous and kindly welcome from the community, accompanied by acts of personal kindness from individuals, which I shall always hold in grateful remembrance. But this would not be the place to attempt the task—in any case no easy one—of attempting to express my sense of American kindness and

hospitality. My present purpose is to indicate simply the remarkable progress made by Americans in astronomical science during the last half-century.

Fifty years ago there were few telescopes and no observatories in America. It was not greatly to be wondered at that the nation should not up to that time have given any great degree of attention to scientific matters. The proportion of the population having leisure for scientific and especially for astronomical research was but small, and the government had matters of more vital importance to attend to than the erection of observatories. For several years the attention of Congress had been called to the necessity of a national observatory; but when President Adams, in 1825, made a special appeal to this effect, his proposal met with ridicule and disfavor.

The first action towards the initiation of astronomical research in America bears date March 1810, when it was proposed in Congress (by Mr. William Lambert, of Virginia), that a first meridian should be established for the United States (the meridian of the Capitol at Washington being selected), in order to obviate the "confusion already existing in consequence of the assumption of different places within the United States as first meridians, on the published maps and charts" in the country. The proposition was not at once acted upon. In July 1812 we find Mr. Monroe, then Home Secretary of State, indicating its astronomical bearing. "In admitting," said he, "the propriety of establishing a first meridian within the United States, it follows that it ought to be done with the greatest mathematical precision. It is known that the best mode yet discovered for establishing the meridian of a place is by observations of the heavenly bodies; and that, to produce the greatest accuracy in the result, such observations should be often repeated, at suitable opportunities, through a series of years, by means of the best instruments. For this purpose an observatory would be of essential utility. It is only in such an institution, to be founded by the public, that all the necessary implements are likely to be collected together; that systematic observations can be made for any great length of time, and that the public can be made secure of the results

of the labors of scientific men. In favor of such an institution it is sufficient to remark that every nation which has established a first meridian has also established an observatory." Mr. Lambert brought in a bill proposing the erection of such an observatory in 1813; but nothing more was done until 1815, when the memorial on which the bill of 1813 had been based was referred to a select committee. No steps were then taken, however, to carry a bill. In November, 1818, a third memorial from Mr. Lambert was presented, and referred to a select committee; but the resolution asked for was not finally passed until March 3, 1821, when Mr. Lambert was appointed by the President, "to make astronomical observations by lunar occultations of fixed stars, solar eclipses, or any approved method adapted to ascertain the longitude of the Capitol from Greenwich." In December 1823 Mr. Lambert, in a report of his labors, gave for the longitude of the Capitol $76^{\circ} 55' 30''.54$, closing his report with a strong appeal for the erection of an observatory.

Two years later, President Adams urged on Congress the establishment of a national observatory as part of a wider scheme for the advancement of knowledge. His remarks on the astronomical portion of the scheme serve well to show the position of astronomy in America half a century ago. "Connected with the establishment of a university," he says, "or separate from it, might be undertaken the erection of an astronomical observatory, with provision for the support of an astronomer to be in constant attendance on the phenomena of the heavens, and for the periodical publication of his observations. It is with no feeling of pride as an American that the remark may be made, that, on the comparatively small territorial surface of Europe there are existing more than one hundred and thirty of these lighthouses of the skies; while throughout the whole American hemisphere there is not one. If we reflect for a moment upon the discoveries which in the last four centuries have been made in the physical constitution of the universe by means of these buildings, and of observers stationed in them, shall we doubt of their usefulness to every nation? And while scarcely a year passes over our heads

without bringing some new astronomical discovery to light, which we must fain receive at secondhand from Europe, are we not cutting ourselves off from the means of returning light for light, while we have neither observatory nor observer upon our half of the globe" (!) "and the earth revolves in perpetual darkness to our unsearching eyes?"

In March 1826 a bill "to establish an observatory in the District of Columbia" was brought before Congress and read the first and second time, but the House Journals show no further trace of it. This bill was due to the recommendations of Mr. Adams, who did not relax in his efforts to secure the erection of a national observatory, though delays and disappointments occurred which might well have exhausted his energy, seeing that the dates of his renewed and for awhile useless appeals were 1836, 1838, 1840, and 1842.

Passing over many circumstances in the history of these transactions, not as being without interest, but because space will not permit of their being presented here, we may proceed to the time when the actual erection of the buildings was commenced. This was in 1843, or no less than thirty-three years after the plan for an observatory was first proposed, so that fully one-half of the period which has elapsed since Lambert of Virginia first called his countrymen's attention to the necessity of establishing a national observatory was lost in discussions and delays. At the close of September 1844 the new building was ready for occupancy, and the instruments were adjusted.

From 1844 to 1861 the Washington Observatory was under the superintendence of Lieutenant Maury. In September 1846 the first volume of observations was issued. Its value has been thus described by an impartial and competent judge. "Besides a fair amount of observations with the two transit instruments in the meridian and the prime vertical, and those with the mural circle, it contained various important investigations of the errors and corrections peculiar to the instruments: Professor Coffin's masterly discussion of the adjustments of the mural circle, and his expansion of Bessel's Refraction Tables; Walker's investigation of the latitude of the observa-

tory, and his comparison of the standard thermometers; all of great value."

In the second volume reference was made to the discovery of Neptune, and the success of Mr. Walker, one of the assistants, in detecting amongst Lalande's observations two of Neptune on May 8 and 10, 1795, when the planet was observed and recorded as a fixed star. "Astronomers were thus furnished with an observation of Neptune made fifty-two years before, which afforded the means of a most accurate determination of the orbit, and enabled the superintendent of the American Nautical Almanac to publish an ephemeris of the new planet two years in advance of all other parts of the Almanac. *The observatory was first brought into prominence by these researches.*" In October 1849 Lieutenant (now Rear-Admiral) Davis wrote as follows to the Hon. Secretary of the Navy on this subject. "The theory of Neptune belongs, by right of precedence, to American science. In connection with its neighbor, Uranus, it constitutes an open field of astronomical research, into which the astronomers and mathematicians of the United States have been the first to enter, and to occupy distinguished places." Deprecating heartily, though I do, all reference to priority or nationality in such matters, as opposed to the true scientific spirit, I cannot but note how Professor Newcomb, by his admirable researches into the theory of Uranus and Neptune, has fulfilled the hopes thus expressed nearly a quarter of a century before his labors were brought to a successful termination.

The work of the observatory thus happily inaugurated was prosecuted steadily till 1861, when Commander Maury left Washington to join the cause of the Confederate States. During the greater part of the war the observatory was under the charge of Captain Gilliss, who died on February 9, 1865. "It has been noted as a strange coincidence of circumstances," says Professor Nourse, in the memoir of the observatory from which we have been quoting, "that the last morning of his life witnessed an announcement of results deduced at this observatory which had fulfilled his long deferred hope of determining the solar parallax by simultaneous observations in Chili and in the United States. This

announcement would have been peculiarly gratifying to him because these results were from the joint activity of the two observatories, founded through his exertions, five thousand miles apart."

From 1865 to 1867 the observatory was under the superintendency of Rear-Admiral C. H. Davis, and from 1867 to the present time it has been under that of Rear-Admiral B. F. Sands. Without further considering the work accomplished at the observatory itself, which has partaken of the general character of official astronomical research, we may consider here some of the special astronomical occasions at which the observers trained at Washington have assisted.

The total eclipse of August 7, 1869, was closely observed by parties from the observatory. Professor Asaph Hall and Mr. J. A. Rogers proceeded to Alaska; Professors Newcomb, Harkness, and Eastman, to Iowa; and Mr. F. W. Bardwell, to Tennessee. The observations made on this occasion were of great value and interest. The solar prominences had had their real nature determined during the eclipse of August 1868; and the American observers were not content to repeat the observations then made, but extended the method of spectroscopic analysis to the corona. They also obtained photographs of the colored prominences. The work accomplished by the Washington observers, together with the observations made by Dr. Curtis, Mr. J. Homer Lane, of Washington City (Ia.) and Mr. W. S. Gilman, jun., of New York, and Gen. Myer, U.S.A., form a quarto volume of 217 pages, with twelve illustrations. Of this valuable and interesting volume three thousand five hundred copies were printed by joint resolution of Congress.

The superintendent of the Washington observatory was not content with this. "Believing that the experience of its officers in their observations of the eclipse of 1869 should be availed of for the further elucidation of the subjects involved in such phenomena, he addressed the Navy Department upon the subject of their employment in Europe in observing the eclipse of December 1870; the Department promptly detailed the professors who had been the observers of the previous year;" and it was doubtless through the energy thus displayed by Rear-Admiral Sands, that other skilful

American astronomers were enabled to cross the Atlantic for the purpose of observing that important eclipse. Unfavorable weather prevented observations of this eclipse at some of the best stations, but the American observers succeeded in establishing the accuracy of the observations made in 1869; and to them must be attributed in large part the definite demonstration of the fact, which though now admitted was then much disputed, that the corona is a solar phenomenon, and not due to the illumination of our own atmosphere only.

The part taken by the Washington Observatory in preparing for and co-operating in the observation of the transit of Venus, on Dec. 8, 1874, is too recent to need full description in this place. I may be permitted, however, to dwell with special commendation on the manner in which American astronomers devoted themselves at that time to a task which they might fairly have thought the business of their European brethren. A transit of Venus is to occur in 1882 which will be specially American, being visible wholly or in part from every portion of the United States; and if America had reserved her energies for that occasion, no complaint could reasonably have been made. It was indeed the prevalent idea in Europe that that would be the course she would adopt. But with singular generosity and scientific zeal, she not only devoted to the work of observing the earlier transit a sum largely exceeding the amount granted by any other government (and nearly twice as large as Great Britain paid), but undertook some of the most difficult portions of the work, which otherwise would have been left unprovided for. I cannot but recall with a feeling of something like personal satisfaction (though conscious that such a feeling ought to find no place in the mind of the true student of science) the gratification with which I welcomed the announcement, early in 1873, that America had undertaken to occupy positions, the importance of which I had long pointed out, but which, but a fortnight before that announcement reached Europe, had been confidently described as astronomically inferior and geographically unsuitable. The pleasure I then felt was only surpassed by that which I experienced subsequently, when news

received from the various observing stations showed that at those just mentioned were achieved some of the most important successes of the occasion.

Another noble contribution made to science at Washington has been the erection of the splendid refractor, 26 inches in aperture, which is now the chief equatorial of the observatory. America is fortunate in possessing in Alvan Clark the greatest living master of the art of constructing large object-glasses of good definition. He had already constructed a telescope 18 inches in aperture for the observatory at Chicago; but by the contract negotiated with him in August 1870 by Professor Newcomb, he was called on to achieve a far more difficult task in the construction of a telescope of 26 inches clear aperture. He has successfully accomplished this task, and the telescope has already obtained good results under Newcomb's skilful management. The most important of these is an extensive series of observations of the satellites of Uranus and Neptune, made with a view of determining the elements of their orbits and the masses of the planets round which they circle. The observation of the two Uranian satellites, Ariel and Umbriel, discovered by Lassell, and of the Neptunian satellite also discovered by him, must be regarded, on account of the extreme difficulty of observing these bodies, as a very valuable contribution to astronomy. It is pleasant to notice that Newcomb has been able most thoroughly to confirm the accuracy of Lassell's work in Malta, the mean notions of Ariel and Umbriel deduced from the Malta observations being so accurate that, says Newcomb, "they will probably suffice for the identification of those objects during several centuries." Although no systematic search has been made for new satellites of Uranus, yet enough has been done to show, "with considerable certainty," that at least the outer satellites supposed to have been seen by Sir W. Herschel "can have had no real existence" (as satellites, that is to say).

Before passing to the brief consideration of the work accomplished in some of the other American observatories, we must fully admit the justice of the remarks made by Professor Nourse in closing his memoir relating to it. "The

position now accorded to it," he says, "by the free tributes of scientific men in the Old World as well as at home, is not without honor to our country; and this notwithstanding the comparatively recent founding of the institution, and the as yet limited appropriations sustaining it. It may, therefore, justly claim a yet more generous support; and the pledge may be safely made that if thus supported and efficiently directed, it will make returns yet more gratifying to national pride, and (which is a matter infinitely more important) advancing the highest aims of scientific research. What shall be its future records of success must remain with the support extended by the government and the fidelity of those who are entrusted with its administration."

The actual commencement of astronomical observation in America belongs to a much earlier period than that at which the Washington Observatory was erected. The first telescope used for astronomical purposes in America was set up at Yale College forty-six years ago. The first observatory, however, properly so-called, was erected at Williams College, Mass., in 1836. The next was the Hudson Observatory, established in connection with the Western Reserve College, Ohio, under the charge of Professor Loomis (now of Yale), whose works on astronomy are deservedly held in high esteem in this country as well as in America. Next in order of time came the Observatory of the High School at Philadelphia, which achieved distinction under the able management of Messrs. Walker and Kendall. The West Point Observatory was next established, and placed under the care of Professor Bartlett. All these preceded the Washington Observatory.

Soon after the Washington Observatory had been erected, an observatory was built at Cincinnati. Its history illustrates well the way of carrying out such work in America, when the government does not take the work in hand. The idea of erecting an important observatory in Cincinnati was first entertained by Professor Mitchel, then Professor of Mathematics at Cincinnati College. He proposed to attempt the task without any aid from the general or state government, by the voluntary contribution of all classes of citizens. To ascertain whether

any interest could be excited in the public mind in favor of astronomy, he delivered in the spring of 1842 a series of lectures in the hall of Cincinnati College. With truly American ingenuity he devised a mechanical contrivance, by help of which telescopic views in the heavens were presented with a brilliancy comparable with that "displayed by powerful telescopes." These lectures were attended by large audiences, and, I may add in passing, that the interest which they excited is to this day well remembered in Cincinnati—no small proof of Professor Mitchel's power as a lecturer.* The last lecture of the course was delivered in one of the great churches of the city (a thorough American and sensible proceeding), and at the close Professor Mitchel submitted to the audience, consisting of more than two thousand persons, his plan for erecting a first-class observatory, and furnishing it with instruments of the highest order. He promised to devote five years of faithful effort to accomplish this task. The following course was then suggested:—"The entire amount required to erect the buildings and purchase the instruments should be divided into shares of twenty-five dollars; every shareholder to be entitled to the privileges of the observatory under the management of a board of control, to be elected by the shareholders. Before any subscription should become binding, the names of 300 subscribers should be first obtained. These 300 should meet, organise and elect a board, who should thenceforward manage the affairs of the association." In three weeks the 300 subscribers had been obtained, without calling any public meeting, and merely by quiet visits in which the nature of the scheme was described and explained. Then officers were elected, a directory formed, and Mitchel was sent "to visit Europe, procure instruments, examine observatories, and obtain the requisite knowledge to erect and conduct the institution, which it was now hoped would be one day reared."

* The same remark applies to the lectures which he subsequently delivered in New York, New Orleans, Boston, Brooklyn, and other large cities. It is almost impossible to over-estimate the service thus rendered by Professor Mitchel to astronomy in the United States.

When Mitchel returned four months later, a great change had occurred in the commercial affairs of America. "Everything was depressed to the lowest point," and it was with great difficulty that a sum of \$3,000 was collected and remitted to meet the first payment for the telescope of 12 inches aperture ordered of Merz. The best place for the observatory was a hill-top rising 400 feet above the level of the city. On offering to purchase this from Mr. Longworth, to whom it belonged, Professor Mitchel was directed to select and enclose four acres, which Mr. Longworth presented to the association. On Nov. 9, 1843, the corner-stone of the pier which was to sustain the great refracting telescope was laid by John Quincy Adams, who undertook the long (and then difficult) journey from Washington to give this proof of his interest in the cause of astronomy. When, in May 1844, the great telescope was paid for, the funds of the association were exhausted, and the estimated cost of the building amounted to more than \$7,000. In this difficulty a simple but again perfectly American plan was followed. Mechanics and others were invited to subscribe for stock in the Astronomical Society, paying their subscriptions with work. In six weeks not less than one hundred hands were at work on the hill-top and in the city. The stone of which the building was erected was quarried from the grounds of the society. The lime was burned on the hill, and every means was adopted to reduce unnecessary expenditure. Payment for stock was received in every possible article of trade; due bills were taken, and these were converted into others which would serve in the payment of bills. In this way the building was reared, and finally covered in, without incurring any debt. But the conditions of the bond by which the lot of ground was held required the completion of the observatory in June 1845. It was seen to be impossible to carry forward the building fast enough to secure its completion by the required time without incurring some debt. "My own private resources," proceeds Mitchel, "were used in the hope that a short time after the finishing of the observatory would be sufficient to furnish the funds to meet all engagements. The work was pushed

rapidly forward. In February 1845 the great telescope safely reached the city; and in March the building was ready for its reception." Unfortunately, just at this time, when his private means were exhausted, Professor Mitchel's professorship was brought, in a very summary manner, to a temporary close, in consequence of the college edifice being burned to the ground. To recruit his means without abandoning the cause of astronomy, he gave courses of lectures in the chief cities of the United States, meeting with well-deserved success.

The observatory thus erected achieved useful, though not very striking results. An observatory which was erected a year or two later took so quickly the leading position, so far as the actual study of the heavenly bodies was concerned, that the progress of the Cincinnati astronomers, as indeed of most of the astronomers of the United States, received less attention than otherwise might have been the case. I refer to the Observatory at Harvard (Cambridge, Mass.). Here one of the first equatorials ever made by Merz was erected; and by means of it W. C. Bond and his son Geo. P. Bond made highly interesting additions to astronomical knowledge. The seventh satellite of Saturn (eighth and last in order of discovery) was detected, the dark ring rediscovered and found to be transparent; important drawings of nebulae were made, and many other observations were effected, under the administration of the Bonds. Later, under Professor Winlock, the Harvard Observatory has been distinguished by the excellence of the mechanical arrangements adopted there, and by M. Trouvelot's admirable drawings of solar spots and prominences of the planets Jupiter and Saturn, and of various details of lunar scenery.

In passing, I may note that at Harvard, as indeed elsewhere in America, others than professed astronomers have achieved very useful astronomical work. As Professor Mayer, of the Stevens Institute, Hoboken, has turned his marvellous ingenuity in devising new methods of physical research to astronomical inquiries, so Professor Cooke of Harvard, whose special subject is chemistry, made a most important astronomical discovery, which has since been ascribed to Janssen, who, later (though independently and by

another method) effected it. Professor Cooke made a series of observations on those bands in the solar spectrum which are due to our own atmosphere, with the object of ascertaining whether they are due to the constant constituents of the air, or to the aqueous vapor which is present in the air in variable quantity. Combining hygrometric with spectroscopic observations, he found that when the air is moist these bands are more clearly seen than when the air is dry, and by systematic observations so definitely ascertained this relation as to prove beyond all manner of doubt that the bands are due to aqueous vapor. Unfortunately, though his results were published in America, they were not published in such a way as to attract notice in Europe, and accordingly European astronomers remained ignorant of the most important fact discovered by Cooke until they had rediscovered it for themselves.

The Observatory at Ann Arbor, Michigan, was erected in 1854, chiefly through the exertions of Chancellor Tappan, of the Michigan University. Dr. Brünnow, our present Astronomer Royal for Ireland, was for a long time director of this observatory. It is at present under the able control of Professor Watson, who has added nearly a score of planetoids to the known members of the solar family.

The Observatory of Dartmouth College, Hanover, N.H., illustrates in a remarkable way the energy and zeal with which college observatories are managed in America. It would be difficult to name any observatory in this country where observations of greater interest, as respects the physics of astronomy, have been made than those effected by Professor Young with the 9-inch telescope constructed by Alvan Clark for the Dartmouth College; or than the supplementary observations made by Young with a powerful telescope conveyed to an elevated pass in the Rocky Mountains. Amongst his results may be specially mentioned—first, the observations of the most remarkable solar outburst yet witnessed, an outburst during which the glowing hydrogen of the prominences was driven to a height of at least 200,000 miles from the surface of the sun; and, secondly, the identification of

more than 250 lines in the spectrum of the solar sierra.

And as the most interesting and characteristic observations yet made upon solar prominences are due to Professor Young of Dartmouth Observatory, so the most accurate and detailed drawings yet made of sun-spots are those by Professor S. Langley, of the Alleghany Observatory, near Pittsburgh.

At Chicago, a very fine telescope, 18 inches in aperture, by Alvan Clark, has been erected; but, owing to pecuniary difficulties consequent on the great fire (followed by the commercial depression which has recently affected the United States), that observatory has suffered considerably from the want of a properly remunerated director. The Astronomical Society of Chicago has done its best to set matters straight, but differences have arisen which have marred their efforts. In the meantime Mr. S. W. Burnham, of Chicago, has shown admirable zeal and skill in the systematic observation of double stars, having discovered and measured more than 450 of these objects (all of a delicate and difficult nature).

But, indeed, it would be hopeless to attempt, in the short space available to me here, to give any sufficient account of the labors of American astronomers, whether attached to government or state observatories, or working independently. Of the latter, and in my opinion not the least important class, I need cite only Drs. Rutherford and H. Draper, the former of whom, besides making other extremely important contributions to astronomy and physics, has produced celestial photographs admittedly better than any obtained on this side of the Atlantic, while the latter at an earlier period achieved results in celestial photography which were far superior to any obtained at that time, or for many subsequent years. The advice and assistance rendered by Dr. H. Draper to the astronomers to whom was entrusted the preparations for the recent transit, was most deservedly commemorated in a medal which the American government honored itself by awarding to him.

The most striking feature in the contributions made by Americans to astronomy appears to me to be the skill shown in noting the essential points to be aimed at, and the fertility and readiness of re-

source exhibited as the work proceeds. In England, students of astronomy are too much in the habit of following conventional rules and wasting time over unnecessary preliminaries. An American astronomer notes that some particular observation is wanted, and directs his efforts to making that observation, not considering it necessary in the first place to go over ground already repeatedly traversed by others.

I have been sometimes asked whether officialism is as rampant in America as in England in matters scientific. American scientific officials have assured me that it is, or rather (for they have not worded the matter precisely in that way) they hold that official science is properly (as they consider) paramount in their country. I was gravely assured in Washington, for instance, that the course which I had pursued in England with reference to the suggested official schemes for observing the transit of Venus in 1874 would never have been tolerated in America, despite the fact that the course actually followed by American official science was precisely that which I had advised. It was the *principle*, so an eminent American official scientist assured me, which was in question, and no American would have been suffered to oppose as I did the course advised by the chief official astronomer. What would have happened to such an unfortunate was not clearly indicated; and I must confess that all I heard outside official scientific circles in America suggested to me that any mistake made by official science would be commented upon even more freely in America than in England, and quite as safely. In fact, I had reason to believe that the warmth of my own welcome in America was in no small degree due to the fact that having first proved the justice of my views, I had not been afraid to maintain them publicly against the powers that were until the proper course was adopted.

One other point remains to be noticed—the influence, namely, of religious scruples upon scientific progress and research in America. Here I must admit that I was somewhat disappointed. I expected to find America a long way in advance of England. But with some noteworthy exceptions, especially in the west, America seems to me to be behind

England in this respect. It is only here and there in England—in the Bæotian corners, so to speak, of this country—that the community opposes itself to advanced scientific ideas to the same extent as in some of the leading cities of the United States. This is partly due to two opposite influences—the Puritan element of the American population on the one hand, and the Roman Catholic element on the other. Progress, however, is being steadily made in this as in other matters. Indeed, it has been rather because America began later to bestir itself in the encouragement of free search after truth, that she is at present behind England in this respect. Judging from experience in other matters, she will move rapidly now her progress

has begun, and will soon occupy the position to be expected from the natural freedom and independence of the American mind. It need hardly be said, that in America as in Europe, such contest as arises from time to time between religion and science has its origin entirely from the side of religion. There, as here, religion (so-called) attacks and denounces discoveries inconsistent with the views which the orthodox had been accustomed to advocate; and there, as here, when there is no longer any choice, the orthodox quietly accept these discoveries as established facts, expressing a *naïve* astonishment that they should ever have been thought in the least degree inconsistent with received opinions. —*Popular Science Review.*

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PRIMAVERA.

BY W. W. STORY.

THE Spring has passed this way. Look! where she trod
The daring crocus sprang up through the sod
To greet her coming with glad heedlessness,
Scarce waiting to put on its leafy dress,
But bright and bold in its brave nakedness.
And further on—mark!—on this gentle rise
She must have paused, for frail anemones
Are trembling to the wind, couched low among
These fresh green grasses, that so lush have sprung
O'er the hid runnel, that with tinkling tongue
Babbles its secret troubles. Here she stopped
A longer while, and on this grassy sweep,
While pensively she lingered, see! she dropped
This knot of love-sick violets from her breast,
Which, as she threw them down, she must have kissed,
For still the fragrance of her breath they keep.
And look! here too her floating robes have brushed,
Where suddenly these almond-branches flushed
To greet her, and in blossoms burst as she
Swept by them—gladsomely and gracefully.

Where is she now? Gone! Vain it were to try
To overtake her. Here, then, let us lie
On this green bank and weave a wreath, and sing
From our full hearts the joyous praise of Spring,
Grateful for these dear gifts she left behind—
The flowers, the grass, the soft and odorous wind,
The lingering effluence, the subtle grace
That still, though she has vanished, haunts the place.

Pursuit is vain; for she, like all things fair,
Will not be hunted down into her lair,
And caught and prisoned. Let us not be rude,
Nor seek into her presence to intrude,

But praise her in the distance. Then, perchance,
 She may not flee away with winged feet,
 But pause and backward cast a favoring glance,
 And waft a fragrance to us rare and sweet.
 Too eager, we our present joy may miss
 In the vain chase of an imagined bliss;
 The ideal joy no human hand can seize,
 The dream that lures us and before us flees.

The day is passing. Let us own its spell;
 And as these trees, feeling within them swell
 The blind, dim stirring of the Spring, express
 In leaves and blossoms their mute thankfulness,
 So, grateful, let us take what Nature gives;
 Love be our blossoms—gentle thoughts our leaves.

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Blackwood's Magazine.

KAFIR WEDDINGS AND KAFIR KRAALS.

BY LADY BARKER.

MARITZBURG, *July 3rd.*

I HAVE seen two Kafir weddings lately, and oddly enough by the merest chance they took place within a day or two of each other. The two extremes of circumstances, the rudest barbarism and the culminating smartness of civilization, seemed to jostle each other before my very eyes as things do in a dream. And they went backwards too, to make it more perplexing, for it was the civilized wedding I saw first,—the wedding of people whose mothers had been bought for so many cows, and whose marriage rites had probably been celebrated with a stick, for your Kafir bridegroom does not understand coyness, and speedily ends the romance of courtship by a few timely cuffs.

Well then I chanced to go into town one of these fine bright winter mornings (which would be perfect if it were not for the dust), and I saw a crowd round the porch of the principal church. "What is going on?" I asked naturally, and heard in broken English, dashed with Dutch and Kafir, that there was an "unt y a do" (excuse phonetic spelling), or "bruit log," or "wedding." Hardly had I gathered the meaning of all these words,—the English being by far the most difficult to recognise, for they put a click in it,—than the bridal party came out of church, formed themselves into an orderly procession, and commenced to walk up the exceedingly dusty street, two

and two. They were escorted by a crowd of well-wishers, and a still greater crowd of spectators,—more or less derisive, I regret to state. But nothing upset the gravity and decorum of the bride and bridegroom, who walked first with a perfectly happy and well-satisfied expression of face. Uniforms were strictly excluded, and the groom and his male friends prided themselves on having discarded all their miscellaneous red coats for the day, and on being attired in suits of ready-made tyes, in which they looked queerer than words can say. Boots also had they on their feet, to their huge discomfort, and white soft felt hats stuck more or less rakishly on their elaborately combed-out woolly pates. The general effect of the gentlemen, I am sorry to say, was that of the Christy minstrels; but the ladies made up for everything. I wish you could have seen the perfect ease and grace of the bride, as she "paced" along with her flowing white skirts trailing behind her in the dust, and her lace veil thrown over a wreath of orange blossoms and hanging to the ground. It was difficult to believe that probably not long ago she had worn a sack, or a fold of coarse salemore, as sole clothing. She managed her draperies, all snowy white, and made in the latest fashion, as if she had been used to long gowns all her life, and carried her head as though it had never known red clay or a basket of mealies. I could not

see her features, but her face and throat and bare arms were all as black as jet, and shone out in strong relief from among her muslin frills and furbelows. There were many yards of satin ribbon among these same frills, and plenty of artificial flowers; but it was all white, shoes and all. I am afraid she had "disremembered" her stockings. The principal couple were closely followed by half-a-dozen sable damsels, also "gowned in pure white," and made wonderful with many bows of blue ribbon. Each maiden was escorted by a groomsman, the rear-guard of guests trailing off into colored cottons and patched suits. Everybody looked immensely pleased with him and herself, and I gradually lost sight of them in the unfailing cloud of dust which rises on the slightest provocation at this time of the year. I assure you it was a great event, the first smart wedding in Maritzburg among the Kafirs, and I only hope the legal part is all right, and that the bridegroom won't be free to bring home another wife some fine day, to vex the soul of this smart lady. Kafir marriage laws are in a curious state, and present one of the greatest difficulties in the process of grafting civilized habits on the customs of utter barbarism.

In spite of the imposing appearance of bride and bridegroom, in spite of the good sign all this aping of our ways really is, in spite of a hundred considerations of that nature which ought to have weighed with me but did not, I fear I took far more interest in a real Kafir marriage, a portion of whose preliminary proceedings I saw two days after this gala procession in white muslin and grey tweed. I was working in the verandah after breakfast,—for you must know that it is so cold indoors that we all spend the middle part of the day basking, like lizards, in the delicious warmth of sunny air outside,—when I heard a distant but loud noise beyond the sod fence between us and a track leading over the hills, in whose hollows many a Kafir kraal nestles snugly. I knew it must be something unusual, for I saw all our own Kafirs come running out in a state of great excitement, calling to each other to make haste. G—, too, left the funeral obsequies of a cat-murdered pigeon in which he was busily employed, and

scampered off to the gate, shouting to me to come and see. So I—who am the idlest mortal in the world, and dearly love an excuse for leaving whatever rational employment I am engaged upon—snatched up the baby, who was supremely happy digging in the dust in the sunshine, called Maria in case there might be anything to explain, and ran off to the gate also. But there was nothing to be seen, not even dust, only a sound of monotonous singing and loud grunting coming nearer and nearer, and by-and-by the muffled tread of bare, hurrying feet shuffling through the powdered earth of the track. My own people had clambered up on the fence and were gesticulating wildly and laughing and shouting, Tom waving the great wooden spoon with which he stirs his everlasting "scoff."

"What is it, Maria?" I ask. Maria shakes her head and looks very solemn, saying, "I doan know." But even while she speaks a broad grin breaks all over her face and she shows her exquisite teeth from ear to ear as she says, half contemptuously, "It's only a wild Kafir wedding, lady. There are the warriors: that's what they do when they don't know any better."

Evidently Maria inclines to the long white muslin gown of the civilized bride which I had minutely described to her, and she turns away in disdain. Yes, here they come, first a body of stalwart warriors dressed in skins, and with immense plumes of feathers on their heads, their lithe, muscular bodies shining like ebony as they flash past me, not so quickly, however, but that they have time for the *politesse* of tossing up shields and spears with a loud shout of "Inkosi!"—which salutation the baby, who takes it entirely to himself, returns with great gravity and unction. These are the vanguard, the flower of Kafir chivalry, who are escorting the daughter of a chieftain to her new home in a kraal (on the opposite range of hills. They make it a point of honor to go as quickly as possible, for they are like the stroke oar, and give the time to the others. After them come the male relatives of the bride, a motley crew, numerous but altogether wanting in the style and bearing of the warriors. Their garb, too, was a wretched mixture and compromise

between clothes and no clothes, and they shuffled breathlessly along, some in sacks over their shoulders, some in old tunics of red or blue, and nothing else, and some only in two flaps or aprons. But all wore snuff-boxes in their ears, snuff-boxes made of every conceivable material,—hollow reeds, cowries, tiger-cats' teeth, old cartridge cases, acorn shells, empty chrysalises of some large moth,—all sorts of miscellaneous rubbish which could by any means be turned to this use. Then came a more compact and respectable-looking body of men, all with rings on their heads, the Kafir sign and token of well-to-do-ness, with bare legs, but draped in bright-colored rugs or blankets across their bodies. They too fling up their right arm and cry "Inkosi!" as they race along, but are more intent in urging on their charge, the bride, who is in their midst. Poor girl, she has some five or six miles yet to go, and she looks ready to drop now, but there seems to be no consideration for her fatigue, and I observe that she evidently shrinks from the sticks which her escort flourish about. She is a good-looking, tall girl, with a nice expression, in spite of her jaded and harried air. She only wears a sheet of coarse brownish cloth draped gracefully and decently around her, leaving, however, her straight, shapely legs bare to run. On her right arm she, too, bears a pretty little shield made of dun and white ox-hide, and her face is smeared over brow and cheeks with red clay, her hair also being tinged with it. She glances wistfully, I fancy, at Maria, standing near me in her good clothes and with her fat comfortable look. Kafir girls dread being married, for it is simply taking a hard place without wages. Love has very rarely anything to do with their union, and yet the only cases of murder of which I have heard have been committed under the influences of either love or jealousy. This has always seemed odd to me, as a Kafir girl does not appear at all prone to one or the other. When I say to Maria, "Perhaps you will want to marry some day, Maria, and leave me?" she shakes her head vehemently and says, "No, no: I should not like to do that. I should have to work much harder, and no one would be kind to me."

Maria, too, looks compassionately at

her savage sister racing along, and murmurs, "Maria would not like to have to run so fast as that." Certainly she is not in good condition for a hard gallop across these hills, for she is bursting out of all her gowns, although she is growing very tall as well.

There is no other woman in the bridal cavalcade, which is a numerous one, and closes with a perfect mob of youths and boys, grunting and shuffling along. Maria says doubtfully, "I think they are only taking that girl to look at her kraal; she won't be marry just yet, for they say the beer is not ready so soon." This information was shouted out as some of the party rushed past, but I could not catch the exact words amid the loud monotonous song with a sort of chorus or accompaniment of grunts.

Ever since my arrival I have wanted to see a real Kafir kraal, but the difficulty has been to find one of any size, and retaining any of the distinctive features of such places. There are numbers of them all about the hills which surround Maritzburg, but they are poor degenerate things, the homes of a lower class of Kafir,—a savage in his most disgusting and dangerous state of transition, when he is neither one thing nor the other, and has picked up only the vices of civilization. Such kraals would be unfavorable specimens of a true Kafir village, and only consist of half a dozen ruinous filthy hovels, whose inhabitants will probably beg of you. For some time past I have been inquiring diligently where a really respectable kraal could be found, and at last I heard of one about eight miles off, whose Induna, or headman, gave it a very good character. Accordingly we set out on a broiling afternoon, so early in the day that the sun was still beating down on us with all his summer tricks of glowing heat and a fierce fire of brightest rays. The road is steep, over hill and dale, and it is only when we have climbed to the top of each successive ridge that a breath of cool air greets us. A strange and characteristic panorama gradually spreads itself out before and behind us. After the first steep ascent we lose sight of Maritzburg and its bosky streets. From the next ridge we can see well the regular ring of wooded homesteads, which lie in a wide circle outside the primitive little town.

Each rising down has a couple or so of these suburban villas, hid away in gum trees, clinging to its swelling sides,—melancholy-looking sides they are now, and dreary is the immediate country around us; for grass fires have swept the hills for a hundred miles and more, and far as the eye can reach all is black and sere and arid, the waggon tracks alone winding about in dusty distinctness. The streams, too, have shrunk away to nothing, and scarcely show between their high banks. It is a positive relief to have a ride, when we have clambered up the rocky track, across the highest saddle we have yet needed to mount. Close on our left rises, some three hundred feet straight up against the brass-bright sky, a big bluff, with its basalt sides cut away clean and sharp, as though by a giant's knife. In its cold shade a few stunted bushes are feebly struggling to keep their scraggy leaves and branches together; and on the right the ground falls irregularly away down to a valley, in which are lovely patches of young forage, making a tender green oasis, precious beyond words, in contrast with the black and sun-dried desolation of the hills around. Here, too, are the inevitable gum trees, not to be despised at this ugly time of year, although they are, for all the world, like those stiff wooden trees, all of one pattern, peculiar to the model villages in the days of our childhood. With quite as little grace and beauty do these gum trees grow, but yet they are the most valuable things we possess, being excellent natural drainers of marshy soil, kindly absorbers of every stray noxious vapor, and good amateur lightning-conductors into the bargain. Amid these much-abused, not-to-be-done-without trees, then, a gable peeps: it is evidently a thriving, comfortable homestead; yet here my friendly guide and companion draws rein, and looks around with deep perplexity on his kindly face.

"How beautiful the view is!" I cry in delight; for indeed the distant sweep of ever-rising mountains, the splendid shadows lying broad and deep over the hill and valleys, the great Umgeni, disdaining even this long drought, and shining here and there like a silver riband, now widening into a mere, now making almost an island of some vast tract of country, but always journeying "with a

gentle ecstasy," is all most beautiful. The burnt-up patches give only a brown amber depth to the willows on the distant hills, and the rich red soil glows brightly on the bare downs near us, as the westerling sun touches and warms them into life and color. I am well contented to drop the reins on my old horse's neck whilst I gaze with greedy eyes on the fair scene, which I feel will change and darken in a very short while. Perhaps it is also this thought which makes my companion say anxiously,—

"Yes: but look how fast the sun is dropping behind that high hill; and *where* is the kraal? It ought to be exactly here, according to Mazimbulu's directions; yet I don't see a sign of it: do you?"

If his eyes, accustomed since childhood to every rock and cranny in these hills, could not make out where the kraal hid, little chance was there of mine finding it out. But even he was completely at fault, and looked anxiously around like a deer-hound which has lost the scent. The narrow tract before us led straight on to the interior for a couple of hundred miles, and in all the panorama at our feet we could not see trace or sign of living creature, nor could the deadliest silence bring sound of voice or life to our strained ears.

"I dare not take you any farther," Mr. Y. said: "it is getting much too late already. But how provoking to come all this way and have to go back without finding the kraal."

In vain I tried to comfort him by assurances how pleasant the ride had been, beguiled by many a hunting story of days when lions and elephants drank at the stream before us, and when no man's hand ever loosed clasp of his gun, sleeping or waking. We had come to see a kraal, and it was an expedition *mangué* if we could not find it. Still the sun seemed in a tremendous hurry to reach the shelter of that high hill yonder, and even I was constrained to acknowledge we must not go farther along the rocky track before us. At this moment of despair there came swiftly and silently round the sharp edge of the bluff just ahead of us, two Kafir women, with large bundles of fire-wood on their heads, and walking rapidly along as though in a hurry to get home. To my companion, Kafir is as familiar as English, so

he is at no loss for pleasant words and still more pleasant smiles with which to ask the way to Mazimbulu's kraal. "We go there now, O great chieftain," the women answer with one voice; and true to the savage code of politeness, they betray no surprise as to what *we* can possibly want at their kraal so late. We had scarcely noticed a faint narrow track on the burnt-up ground to our right, but into this the women unhesitatingly struck, and we followed them as best we could. Scarcely three hundred yards away from the main track, round the shoulder of a down, and nestling close in a sort of natural bason scooped out of the hill-side, lay the kraal,—silent enough now, for all, except a few old men and babies, were absent. The women, like our guides, were out collecting fire-wood, some of the younger men and bigger children had gone into town to sell poultry and eggs, others were still at work for the farmer whose homestead stood a mile or two away. There must have been at least a hundred goats skipping beneath the steep hill-side down which we had just come, goats who ventured to the very edge of the shelf along which our bridle path had lain, and yet who had never by bleat or inquisitive protruded head betrayed their presence to us. In the centre of the excavation stood a large, high, neatly wattled fence, forming an enclosure for the cattle at night,—a remnant of the custom when Kafir herds were ravaged by wild animals or still wilder neighbors. A very small angle of this place was portioned off as a sty for the biggest and mangiest pig it has ever been my lot to behold: a gaunt and hideous beast, yet the show animal of the kraal, and the first object which Mazimbulu pointed out to us. Of course Mazimbulu was at home: what is the use of being an Induna if you have to exert yourself? He came forward at once to receive us, and did the honors of his kraal most thoroughly and with much grace and dignity. Mr. Y— explained that I was the wife of another Inkosi, and that I was consumed by a desire to see with my own eyes a real Kafir kraal. It is needless to say that this was pleasantly conveyed, and a compliment to this particular kraal neatly introduced here.

Mazimbulu—an immensely tall, pow-

erful, elderly man, "ringed," of course, and draped in a large gay blanket—looked at me with half contemptuous surprise, but saluted, to carry off his wonder, and said deprecatingly to Mr. Y—:

"O chief, the chieftainess is welcome. But what a strange people are these whites! They have all they can desire, all that is good and beautiful of their own, and yet they can find pleasure in looking at where we live. Why, chief, you know their horses and dogs have better places to sleep in than we have. It is all most wonderful: but the chieftainess may be sure we are glad to see her, no matter for what reason she comes."

There was not very much to see after all. About twenty large, substantial, comfortable huts, all of the beehive shape, stood in a crescent, the largest in the middle. This belonged to Mazimbulu, and in front of it knelt his newest wife, resting on her heels, cutting up pumpkins into little bits to make a sort of soup, or what she called "scoff." I think young Mrs. Mazimbulu was about the handsomest and the sulkiest Kafir woman I have yet seen. She was very smart in beads and bangles, her *coiffure* was elaborate and carefully stained red, her blanket and petticoat were gay and warm and new, and yet she looked the very picture of ill-humor. The vicious way she cut up her pumpkins and pitched the slices into a large pot, the sarcastic glances she cast at Mazimbulu as he invited me to enter his hut, declaring that he was so fortunate in the matter of wives that I should find it the pink of cleanliness. Nothing pleased her, and she refused to talk to me, or to "saka bono," or anything. I never saw such a shrew, and wondered whether poor Mazimbulu had not indeed got a handful in this, his latest purchase. And yet he looked quite capable of taking care of himself, and his hand had probably lost none of its old cunning in boxing a refractory bride's ears,—for the dame in question seemed rather on the watch as to how far she might venture to show her temper. Such a contrast as her healthy vigorous form made to that of a slight, sickly girl, who crawled out of an adjoining hut to see the wonderful spectacle of an "Inkosi-casa!" This poor thing was a martyr to sciatica, and indeed had rheumatism appar-

ently in all her joints. She moved aside her kilt of lynx skins to show me a terribly swollen knee, saying plaintively in Kafir, "I ache all over for always." Mazimbulu declared, in answer to my earnest inquiries, that they were all very kind to her, and promised faithfully that a shilling which I put in her hand should remain her own property. "Physic or beads, just as she likes," he vowed; but he seemed well content when I gave another coin into his own hand for snuff. There were not many babies,—only three or four, miserable, sickly little creatures, all over sores and dirt and ophthalmia. Yet the youth who held our horses whilst we walked about, and Mr. Y— chatted fluently with Mazimbulu, might have stood for the model of a bronze Apollo, so straight and tall and symmetrical were his shapely limbs and his lithe, active young body. He, too, shouted "Inkosi-casa!" in rapturous gratitude for a sixpence, and vowed to bring me fowls to buy whenever the young chickens all about should be big enough. My commissariat is always on my mind, and I never lose an opportunity of replenishing it; but I must confess that I get horribly cheated whenever I try bargaining on my own account. For instance, I sent out a roving commission for honey the other day, which resulted in the offer of a small jar containing perhaps one pound of empty, black, and dirty comb, and a table-spoonful of honey, which apparently had already been used to catch flies. For this treasure eight shillings was asked. To-day I tried to buy a goat from Mazimbulu, but he honestly said it would be of no use to me; nor could I extract a promise of milk from the cows I saw coming home just then. He declared that there was no milk to be had, and certainly when one looks at the surrounding pasture, it is not incredible.

Mazimbulu's own hut contained little beyond a stool or two, some skins and mats for a bed, a heap of mealie husks with which to replenish the fire, his shield and bundle of assegais and knobkerries. There was another smaller wattled enclosure holding a great score of mealies, and another piled up with splendid pumpkins. At the exact top of Mazimbulu's hut stood a perfect curiosity-shop of lightning-charms—old spear

points, shells, the broken handle of a China jug, a painted portion of some child's toy,—all that is mysterious or unknown to them must perforce be a lightning-charm. They would no more use a lightning-conductor than they would fly, declaring triumphantly that *our* houses, for all their "fire-wires," got more often struck by lightning than their huts. Indeed, Mazimbulu became quite pathetic on the subject of the personal risk I ran on account of my prejudice against his lightning-charms, and hinted that I should come to a bad end some day through it.

By the time we had spent half-an-hour in the kraal the sun had long since gained the shelter of the western hills and sunk below them, taking with him apparently every vestige of daylight out of the sky. No one who had not felt it could believe the rapidity of the change in the temperature. So long as there was sunlight, it was too hot. In half-an-hour it was biting bitterly cold. We could not go fast down the rocky tracks, but we cantered over every inch of available space,—cantered for the sake of warming ourselves as much as to get home. The young moon gave us light enough to keep on the right track, but I don't think I ever was so cold in my life as when we reached home, about half-past six. The wood fire in the little drawing-room—the only room with a fireplace—seemed indeed delicious, and so did a cup of tea, so hot as to be almost scalding. F— declared I was of a bright blue color, and I admit that I came nearer to understanding what being frozen to death meant than I had ever done before. Yet there was not much frost, but one suffered from the reaction after the burning heat of the day and the impossibility of taking any extra wraps with one.

July 12th.—Don't think I am going to let you off my usual monthly grumble about the weather. Not a bit of it! It is worse than ever. At this moment a violent and bitterly cold gale of wind is blowing, and I hear the red tiles flying off the house, which I fully expect will be a regular sieve by the time the rains come. Not one drop of rain have we had these six weeks, and people remark that the dry season is *beginning*. Everything smells and tastes of dust; one's clothes, the

furniture, everything. If I sit down in an arm-chair I disturb a cloud of dust; my pillow is, I am convinced, stuffed with it; my writing-table is inches deep in it. All the food is flavored with it, and Don Quixote's enemies could not more persistently bite the dust than we do at each meal. Yet when I venture to mention this drawback, in answer to the usual question, "Is not this *delicious* weather?" the answer is always, "Oh but you can have no dust *here*: you should see what it is in town!" Between me and the town is an ever-flying thick scud of dust, through which one can but ill discern the waggons. I wonder there are no accidents, for I often hear a waggon before or behind me when it is impossible to see anything through the choking, suffocating cloud around you. On a still day, when one carries one's own dust quietly along with one, there is nothing for it except to stop at home if you wish to keep your temper. The other day little G— was about to suffer the extreme penalty of the domestic law for flagrant disobedience, and he remarked drily to the reluctant executioner, "You had better take care, *I am very dusty*." It was quite true, for the slipper elicited such clouds of dust from the little blue serge suit that the chastisement had to be curtailed, much to the culprit's satisfaction. As for the baby, he was discovered the other day taking a dust bath exactly like the chickens, and considered it very hard to be stopped in his amusement. Every now and then we have a dust-storm. There have been two this month already, perfect hurricanes of cold wind driving the dust in solid sheets before them. Nearer the coast these storms have been followed by welcome showers, but here we are still dry and parched. The only water supply we (individually speaking) have, is brought in buckets from the river about half a mile off, and one has to wash in it and drink it with closed eyes. But it cannot be unwholesome, thank heaven, for most of us take nothing else, and are very well. I owe it a grudge, however, on account of its extraordinary badness. Not only does it spoil the flavor of my beloved tea, but it chaps our skins frightfully; and what with the dust in the pores, and the chronic irritation caused by some strange peculiarity in

the climate, we are all like nutmeg-graters, and one can understand the common sense of a Kafir's toilette into which grease enters largely. Yet in spite of dust and dryness, for everything is ludicrously dry,—sugar and salt are so many solid cakes not to be dealt with by means of a spoon at all,—one is thankful for the cold bracing weather, and unless there is a necessity for confronting the dust, we contrive to enjoy many of the pleasant sunshiny hours in the verandah, and I rejoice to see the roses blooming again in the children's cheeks. Every evening we have a wood fire on the open hearth in the drawing-room, and there have been sharp frosts lately. The waving tips of the poor bamboos look sadly yellow, but I have two fine flourishing young camellias out of doors without shelter of any sort, and my supply of roses has never failed from those trees which get regularly watered. The foliage, too, of the geraniums is as luxuriant as ever, though each leaf is white with dust, but the first shower will make them lovely once more.

The quail passed over here a few days ago in dense solid clouds, leaving many weary stragglers here and there on the veldt to delight the sportsman. I am told that it is a strange and wonderful sight to see these birds sweep sometimes in the dead silence of a moonlight night, flying low and compactly, beating the air with the monotonous whirr of their untiring wings, down one of the empty streets of quiet Maritzburg, so close to the bystander that a stick would knock some over. And to think of the distance they had travelled thus! For hundreds and hundreds of miles,—over deserts and lakes, at whose existence we can but dimly guess, the little wayfarers have journeyed from the far interior down to the sea-board of this great continent. Last season a weary pair dropped down among my rose bushes, but no sportsman knew of their visit, for I found them established there when I came, and jealously guarded their secret for them; but I don't know yet whether any others have claimed my hospitality and protection in the same way, poor pretty creatures.

I was seized with a sudden wish the other day to see the market here, and accordingly got my household up *very*

early one of these cold mornings, hurried breakfast over, and drove down to the market square exactly at nine, a.m., when the sales commence. Every thing is sold by auction, but sold with a rapidity which seemed magical to me. I saw some fine potatoes a dozen yards away from where the market-master was selling, with lightning speed, waggon load after waggon load of some fresh green forage,—I certainly heard “Two and a half-penny,” or, “And three farthings,” and “Thank you: gone,” coming rather near, and I had gone so far in my own mind as to determine which of my friends—for heaps of people I knew were there—I should ask to manage it for me. But like a wave the bidding swept over my potatoes; I quite looked upon them as mine, and they were gone. So as I did not want any firewood, and there were only about a dozen huge waggons piled high up with lopped branches and limbs of trees; and as I had begun to perceive that a dozen waggon loads were nothing to the rapid utterance of the market-master, I went into the market-hall to look at the fruits and vegetables, eggs and butter, with which the tables were fairly well covered. There was very little poultry, and a pair of ducks, towards which I felt somewhat attracted, sold for 6s. 6d. each, directly the bidding began. So I consoled myself by purchasing, still in a vicarious manner, by means of a friend, three turkeys. *Such a bargain!* The only cheap things I have seen in Natal—only nine shillings and ninepence a piece; beautiful full-grown turkeys,—two hens and a cock—just what I wanted. Of course everybody clustered round me and began to damp my joy directly, by pouring statistics into my ears of the mortality among turkey chicks, and the certain ill-fortune which would attend my efforts to rear them. But it is too early in the season yet for such anxieties, so I am free for the next two months to admire my turkeys as much as I choose, without breaking my heart over the untimely fate of their offspring. Yes, those turkeys were the only cheap things: butter sold easily at 3s. 9d. a pound, eggs at 3s. a dozen, and potatoes and other vegetables at pretty nearly Covent Garden prices. It gave one a good idea of the chronic state of famishment even so little a town as this was in,

—to see the clean sweep made of every single thing, live and dead—always excepting my turkeys,—in ten minutes after the market-master entered the building. I am sure treble the quantity would have been snapped up as quickly,—such odd miscellaneous things, bacon, cheese, honey, pumpkins, all jumbled together. Then, outside for a few moments, to finish up with, a few wheelbarrow loads of young barley, a basket or two of mealies, and some fagots of firewood, brought in by the Kafirs, and lo, in something less than an hour it is all over, and hungry Maritzburg has swallowed up all she can get for to-day. The market-master is now at liberty—after explaining to a Kafir or two that it is not, strictly speaking, right to sell your wheelbarrow-load twice over, once privately, and once publicly—to show me the Market Hall; a very creditable building, large and commodious, well roofed and lighted. Knowing as I do the exceeding slowness of building operations in Maritzburg, it struck me as little less than marvellous to hear that it had actually been run up in twenty-one days. No lesser pressure than Prince Alfred's visit, nearly fifteen years ago, could have induced such Aladdin-like rapidity; but the loyal Maritzburgians wanted to give their Sailor Prince a ball, and there was no room in the whole town capable of holding one-quarter of the people who wanted to see the Royal midshipman: so Kafirs, and whites, and men of all colors fell to work with a will, and hammered night and day until all was finished, extempore chandeliers of painted hoops dangling in all directions, flowers and flags hiding the rough and ready walls, and the “lion and the unicorn fighting for the crown” in orthodox fashion over the door-way, where it remains to this day. The only thing I wonder at is whether the floor was at all more even then than now, for at present it is nearly as much up and down as the waves of the restless Indian Ocean.

Now, too, that there are no more domestic purchases to be made, I can look about and see how quaint and picturesque it all is. In summer the effect must really be charming, with the double bordering of acacia trees, fresh and green, instead of leafless and dusty,—the queer little Dutch church, with its

hugely disproportionate weather-cock, glistening large and bright in the streaming sunlight,—the teams of patient bullocks moving slowly off again through the dust with waggons of forage or fire-wood, to be dropped to their various destinations, and the fast melting heterogeneous crowd of Kafirs and Coolies, Dutch and English, some with baskets, some with dangling poultry, or carefully-carried tins of eggs, but *none* with turkeys! The Market Hall and its immediate vicinity is quite deserted, but the crowd seems re-assembling a little lower down, where a weekly auction is being held in a primitive fashion out in the open air beneath the acacia trees. A stalwart Kafir wanders about listlessly ringing a large bell, and the auctioneer, mounted on a table, is effecting what he calls a clearance sale, apparently of all the old rubbish in the place: condemned military stores, such as tents and great-coats, pianos, from which the very ghost of tone has fled years ago, cracked china, broken chairs, crinolines, fiddles, kettles, faded pictures under fly-blown glasses, empty bottles, old baskets, all are "Going, going: gone!" whilst we stand there—drifting away to other homes all over the place.

I pass every day an ingenious though lowly family mansion made solely and entirely of the sheets of zinc out of boxes, fastened together in some strange fashion. Roof, walls, flooring, all are of it. There is neither door nor window facing the road, so I don't know how they are put in; but I can imagine how that hovel must crackle in a high wind. What mysterious law of gravitation keeps it down to the ground I have failed to discover, nor do I know how the walls are supported even in their leaning position. Well, I saw the owner of this cot, a Dutchman, buying furniture, and he was very near purchasing the piano under the impression it was a folding-up bedstead. I have always taken such an interest in the zinc dwelling that it was with difficulty I could refrain from giving my opinion about its furniture.

But the sun is getting high, and it is ten o'clock and past, quite time for all housewives to be at home and the men at their business, so the clearance sale ends like a transformation scene. Kafirs hoist up ponderous burthens on their heads and walk off unconcernedly with

them, and the odds and ends of what were once household gods disappear round the corner. My early rising makes me feel as dissipated as one does after going to a wedding, and I can't help a reluctance to go back to the daily routine of G—'s lessons and baby's pinafores: it seems so delightful to idle about in the sunshine, in spite of the dust. What is there to do, or to see? What excuse can any one find at a moment's notice to prevent my going home just yet? It is an anxious thought, for there is nothing to do and nothing to see beyond waggons and oxen in the length and breadth of Maritzburg. Some one fortunately recollects *the* Mill,—there is only one in the whole place,—and avers that wool-scouring is going on there at the present time. At all events it is a pleasant drive, and in five minutes we are trotting along, raising a fine cloud of dust on the road which leads to the park. When the river-side has been reached, —poor shrunken Umsindusi, it is a mere rivulet now, and thoroughly shrunken and depressed,—we turn off and follow the windings of the banks for a few hundred yards till we come to where the mill wheel catches and makes use of a tiny streamlet just as it is entering the river. It is a very picturesque spot, although the immediate country around is flat and uninteresting; but there is such a profusion of willow trees, such beautiful tufts of tall willow-ferns, such clumps of grasses that the old brick buildings are hidden and shaded by all manner of waving branches. Then in front is the inevitable waggon, the long straggling span of meagre oxen, with their tiny black fore-looper and attendant Kafirs. This is indeed beginning at the end of the story, for into the waggon big neat bales, all ready for shipment, bales which have been "dumped" and branded, are being lowered by a crane out of a large upper store. Very different do those bales look as they now depart from those in which the wool arrives. With the characteristic untidiness and make-shift fashion of the whole country, the wool is loosely and carelessly stuffed into inferior bales, which become ragged and filthy by the time they reach this, and are a discredit to the place as they pass along the streets. That is the state in which it is brought here and delivered over to

the care of the wool scourers. The first step is to sort it all, sift the coarsest dirt out of it, and then away it goes, first into its hot bath of soda and water, and afterwards into many succeeding "tubs" of cooler water, until at last it emerges, dripping indeed, but cleansed from burr and seed, and white as the driven snow, to be next laid out on a terrace sheltered from dust and wind, and dried rapidly under the burning South African sun. Then there is the steam-press which squeezes it tightly into these neat trim bales, and a hydraulic machine which gives it that "one turn more of the screw" which was supposed to constitute the difference between neuralgia and gout, but which here marks the difference between a "dumped" and undumped bale. The iron bands are riveted with a resounding clang, or thud, the letters are rapidly brushed in over their iron plate, and the bale is pronounced finished. A very creditable piece of work it is; neat and tidy outside, and fair and honest inside. I heard none of the usual excuses for dirt and untidiness: no, "Oh, one can't get the Kafirs to do anything." There was a sufficiency of Kafirs at work under the eyes of the masters, but there was no ill-temper nor rough language; all was methodical and business-like,—every detail seen to and carried thoroughly out from first to last, and the result something to be proud of. The machinery combed and raked and dipped with monotonous patience, and many an ingenious connecting rod or band saved labor and time. I declare it was the most encouraging and satisfactory thing I have seen since I came, apart from the real pleasure of looking at a bale of wool turned out as it used to be from every woolshed in New Zealand, instead of the untidy bundles one sees slowly travelling down to Durban, not even well packed in the waggons; apart from this it is inspiring to see the resources of the place made the best of, and everything kept up to the mark of a high standard of excellence. There were no incomplete or make-shift contrivances, and the two bright, active young masters going about and seeing to everything themselves, as colonists ought to do, were such a contrast to the ordinary-looking, unkempt, pale-faced overseer of half-a-dozen

creeping Kafirs, which represents the labor market here.

I feel, however, as if I were rather "loafing" myself, and am certainly very idle, for it is past midday before G— has half enough examined the establishment, or tumbled often enough in and out of the wool press; so we leave the cool shade of the willows and the mesmeric throb of the mill wheel, and drive home through the dust once more to our own little house on the hill.

Ever since I began this letter I have been wanting to tell you of an absurd visitor I had the other day, and my poor little story has very nearly been crowded out by other things.

A couple of mornings ago I was very busy making a new cotton skirt for "Malia,"—for I am her sole dressmaker, and she keeps me at work always, what with growing into a stout grenadier of a girl, and what with rending these skirts upon all occasions. Well, I was getting over the seams at a fine rate in the sewing machine, which I had moved out into the verandah for light and warmth, when I became "ware" of a shadow between me and the sun. It was a very little shadow, and the substance of it was the tiniest old Dutchman you ever saw in your life. I assure you my first idea was that I must be looking at a little goblin, he was so precisely like the pictures one sees in the illustrations of a fairy tale. His long waistcoat of a gay flowered chintz, his odd, square-tailed coat and square shoes, his wide short breeches and pointed hat, were all in keeping with the goblin theory. But his face! I was too startled to laugh, but it ought to have been sketched on the spot. No apple ever was more rosy, no snake-skin ever more wrinkled; eyes as blue and keen as steel gleamed out at me from beneath enormous shaggy brows, and his nose and chin were precisely like Punch's. I wonder what he thought of me? My eyes were as round as marbles, and I do believe my mouth was wide open. He gave a sort of nod, and in a strange dialect said something, to which I in my bewilderment answered "Ja," being the one single word of Dutch I know. This misleading reply encouraged my weird visitor to sit down on the steps before me, to take off his hat, mop his

thin, long, grey locks, and to launch forth with much pantomime into a long story, of which I did not understand one word, for the simple reason that it was all literally in High Dutch. Here was a pretty predicament,—alone with a goblin to whom I had just told a flat falsehood, for evidently his first inquiry, of which I only caught the word “Hollands,” and which I imagined to refer to gin, must have been a demand as to whether I understood his language; and I had said, “Ja.” It was dreadful. In my dismay I remember having heard somebody say “Nie,” and I even followed it up with faltering “Stepts nie” (I don’t understand), which also came to me in my extremity. This contradictory answer puzzled my old gentleman, and he looked at me frowningly, but I had always heard that courage is everything with goblins, so I smiled, and said inquiringly, “Ja?” again. He shook his head reprovingly, and then by the aid of ticking off each word on his fingers and stopping at it until he thought I understood, he contrived by means of German, and English, and Kafir, only breaking out into Dutch at very interesting parts, to tell me that he was in search of a little black ox. I must clearly understand that it was “schwartz,” and also that the “pfennings” it had cost were many. The ox seems to have been a regular demon, if his story was anything like true. No rest had he had. (Here a pantomime of going to sleep.) From Over Berg had he come, and he had bought this wayward beast from one Herr Schmidst, an Inkosi. A great deal of shaking of the head here, which must have meant that this Herr Inkosi had cheated him; yet I longed to ask how one could get the better of a goblin? I didn’t know it was to be done. From the moment the “klein schwartz” ox changed masters my small friend’s troubles began. “Früh in de morgen” did that ox get away every day; in vain was it put in kraals at night, in vain did Kafirs search for it (great acting here of

following up a spoor),—it was over the Berg and far away. He was “drei tags mit nodings to eat ab mealies.” It was a long story, but the refrain was always, “Vere hat dat leetel ox, dat schwartzen ox, got to?” If I am to say the exact truth he once demanded, “Vere dis Teufels dat leetel ox hat be?” but I looked so shocked that he took off his steeple-crowned hat deprecatingly.

“Sprechen sie Kafir?” I asked in despair; but it was no better. His countenance brightened, and he went through it all again, in Kafir, and the “Inkosno” was quite as prominent as the ox had been. Of course I meant that he should speak to some of my Kafirs about it, if he knew their language. I believe we should have been there to this day talking gibberish to each other if little G— had not appeared suddenly round the corner, and taken the matter into his own hands.

“Why, what a queer old man that is, Mume! Wherever *did* you find him, and what *does* he want?” G— demands, with true colonial brevity.

“I think he is looking for a little black ox,” I say guardedly.

“Ja wohl—dat is it: ein leetel black ox, my tear”—(I trust he meant G—).

“Oh, all right!” G— shouts, springing up. “Osa (come), old gentleman! There’s rather a jolly little black bullock over there, I know, because I’ve been with Jack there, looking for a snake.”

The goblin was on his feet in a moment with every wrinkle on the alert. “Danks, my tear umjan: du air ein gut leetel boy. Früh in the morgen,” and so on with the whole story over again, to G—, who understood him much better than I did, and gave me quite a minute account of the “leetel black ox’s” adventures.

The last thing G— saw of it it was taking the fence like a springbok, with the goblin and three Kafirs in full chase after it.—*Evening Hours.*

CHARLOTTE BRONTË. A MONOGRAPH.

BY T. WEMYSS REID.

I.

It is just twenty years since one of the most fascinating and artistic biographies in the English language was given to the world. Mrs. Gaskell's *Life of Charlotte Brontë* no sooner appeared than it took firm possession of the public mind; and it has ever since retained its hold upon all who take an interest in the career of one who has been called, in language which is far less extravagant in reality than in appearance, "the foremost woman of her age." Written with admirable skill, in a style at once powerful and picturesque, and with a sympathy such as only one artist could feel for another, it richly merited the popularity which it gained and has kept. Mrs. Gaskell, however, labored under one serious disadvantage, which no longer exists in anything like the same degree in which it did twenty years ago. Writing but a few months after Charlotte Brontë had been laid in her grave, and whilst the father to whom she was indebted for so much that was characteristic in her life and genius was still living, Mrs. Gaskell had necessarily to deal with many circumstances which affected living persons too closely to be handled in detail. Even as it was she involved herself in serious embarrassment by some of her allusions to incidents connected more or less nearly with the life of Charlotte Brontë; corrections and retractions were forced upon her, the later editions of the book differed considerably from the first, and at last she was compelled to announce that any further correspondence concerning it must be conducted through her solicitors. Thus she was crippled in her attempt to paint a full-length picture of a remarkable life, and her story was what Mr. Thackeray called it, "necessarily incomplete, though most touching and admirable."

Mrs. Gaskell also seems to have set out with the determination that her work should be pitched in a particular key. She had formed her own conception of Charlotte Brontë's character, and with the passion of the true artist and

the ability of the practised writer she made everything bend to that conception. The result was that whilst she produced a singularly striking and effective portrait of her heroine, it was not one which was absolutely satisfactory to those who were the oldest and closest friends of Charlotte Brontë. If the truth must be told, the life of the author of *Jane Eyre* was by no means so joyless as the world now believes it to have been. That during the later years in which this wonderful woman produced the works by which she has made her name famous, her career was clouded by sorrow and oppressed by anguish both mental and physical, is perfectly true. That she was made what she was in the furnace of affliction cannot be doubted; but it is not true that she was throughout her whole life the victim of that extreme depression of spirits which afflicted her at rare intervals, and which Mrs. Gaskell has presented to us with so much vividness and emphasis. On the contrary, her letters show that at any rate up to the time of her leaving for Brussels, she was a happy and high-spirited girl, and that even to the very last she had the faculty of overcoming her sorrows by means of that steadfast courage which was her most precious possession, and to which she was so much indebted for her successive victories over trials and disappointments of no ordinary character. Those who imagine that Charlotte Brontë's spirit was in any degree a morbid or melancholic one do her a singular injustice. Intensely reserved in her converse with all save the members of her own household, and the solitary friend to whom she clung with such passionate affection throughout her life, she revealed to these

"The other side, the novel
Silent silver lights and darks undreamed of,"

which were and have remained hidden from the world, but which must be seen by those who would know what Charlotte Brontë really was as a woman. Alas! those who knew her and her sisters well during their brief lives are few in number now. The Brontës who

plucked the flower of fame out of the thorny waste in which their lots were cast survive in their books and in Mrs. Gaskell's biography. But the Brontës, the women who lived and suffered thirty years ago, and whose characters were instinct with so rare and lofty a nobility, so keen a sensitiveness, so pure a humility, are known no longer.

Yet one mode of making acquaintance with them is still open to some among us. From her school-days down to the hour in which she was stretched prostrate in her last sickness, Charlotte Brontë kept up the closest and most confidential intercourse with her one life-long friend. To that friend she addressed letters which may be counted by hundreds, scarcely one of which fails to contain some characteristic touch worthy of the author of *Villette*. No one can read this remarkable correspondence without learning the secret of the writer's character; none, as I believe, can read it without feeling that the woman who "stole like a shadow" into the field of English literature in 1847, and in less than eight years after stole as noiselessly away, was truer and nobler even than her works, truer and nobler even than that masterly picture of her life for which we are indebted to Mrs. Gaskell.

These letters lie before me as I write. Here are the faded sheets of 1832, written in the school-girl's hand, filled with the school-girl's extravagant terms of endearment, yet enriched here and there by sentences which are worthy to live, some of which have already, indeed, taken their place in the literature of England; and here is the faint pencil note written to "my own dear Nell" out of the writer's "dreary sick-bed" which was so soon to be the bed of death! Between the first letter and that last sad note what outpourings of the mind of Charlotte Brontë are embodied in this precious pile of cherished manuscript! Over five-and-twenty years of a blameless life this artless record stretches. So far as Charlotte Brontë's history as a woman, and the history of her family are concerned, it is complete for the whole of that period, the only breaks in the story being those which occurred when she and her friend were together. Of her early literary ventures we find little here, for even to her friend she did not dare

in the first instance to betray the fearful joys which filled her soul when she at last discovered her true vocation, and spoke to a listening world; but of her later life as an author, of her labors from the day when she owned *Jane Eyre* as the child of her brain, there are constant and abundant traces. Here, too, we read all her secret sorrows, her hopes, her fears, her communings with her own heart. Many things there are in this record too sacred to be given to the world. Even now it is with a tender and a reverent hand that one must touch these "noble letters of the dead;" but those who are allowed to see them, to read them and ponder over them, must feel as I do, that the soul of [Charlotte Brontë stands revealed in these unpublished pages, and that only here can we see what manner of woman this really was who in the solitude and obscurity of the Yorkshire hill-parsonage built up for herself an imperishable name, enriched the literature of England with treasures of priceless value, and withal led for nearly forty years a life that was rendered sacred and sublime by the self-repression and patient endurance which were its most marked characteristics.

Mrs. Gaskell has done her work so well that the world would scarcely care to listen to a mere repetition of the Brontë story, even though the story-teller were as gifted as the author of *Ruth* herself. But those who have been permitted to gain a new insight into Charlotte Brontë's character, those who are allowed to command materials of which the biographer of 1857 could make no use, may venture to lay a tribute-wreath of their own upon the altar of this great woman's memory—a tribute-wreath woven of flowers culled from her own letters. And it cannot be that the time is yet come when the name or the fame or the touching story of the unique and splendid genius to whom we owe *Jane Eyre* will fall upon the ears of English readers like "a tale of little meaning" or of doubtful interest.

II.

In the late autumn of 1847 the reading public of London suddenly found itself called to admire and wonder at a novel which, without preliminary puff of any kind, had been placed in its hands.

"*Jane Eyre*, by Currer Bell," became the theme of every tongue, and society exhausted itself in conjectures as to the identity of the author, and the real meaning of the book. It was no ordinary book, and it produced no ordinary sensation. Disfigured here and there by certain crudities of thought and by a clumsiness of expression which betrayed the hand of a novice, it was nevertheless lit up from the first page to the last by the fire of a genius the depth and power of which none but the dullest could deny. The hand of its author seized upon the public mind whether it would or no, and society was led captive, in the main against its will, by one who had little of the prevailing spirit of the age, and who either knew nothing of conventionalism, or despised it with heart and soul. Fierce was the revolt against the influence of this new-comer in the wide arena of letters, who had stolen in, as it were in the night, and taken the citadel by surprise. But for the moment all opposition was beaten down by sheer force of genius, and *Jane Eyre* made her way, compelling recognition, wherever men and women were capable of seeing and admitting a rare and extraordinary intellectual supremacy. "How well I remember," says Mr. Thackeray, "the delight and wonder and pleasure with which I read *Jane Eyre*; sent to me by an author whose name and sex were then alike unknown to me, and how with my own work pressing upon me, I could not, having taken the volumes up, lay them down until they were read through." It was the same everywhere. Even those who saw nothing to commend in the story, those who revolted against its free employment of great passions and great griefs, and those who were elaborately critical upon its author's ignorance of the ways of polite society, had to confess themselves bound by the spell of the magician. *Jane Eyre* gathered admirers fast; and for every admirer she had a score of readers.

Those who remember that winter of nine-and-twenty years ago know how something like a *Jane Eyre* fever raged among us. The story which had suddenly discovered a glory in uncomeliness, a grandeur in overmastering passion, moulded the fashion of the hour, and

"Rochester airs" and "*Jane Eyre* graces" became the rage. The book, and its fame and influence, travelled beyond the seas with a speed which in those days was marvellous. In sedate New England homes the history of the English governess was read with an avidity which was not surpassed in London itself, and within a few months of the publication of the novel it was famous throughout two continents. No such triumph has been achieved in our time by any other English author; nor can it be said, upon the whole, that many triumphs have been better merited. It happened that this anonymous story, bearing the unmistakable marks of an unpractised hand, was put before the world at the very moment when another great masterpiece of fiction was just beginning to gain the ear of the English public. But at the moment of publication *Jane Eyre* swept past *Vanity Fair* with a marvellous and impetuous speed which left Thackeray's work in the distant background; and its unknown author in a few weeks gained a wider reputation than that which one of the master-minds of the century had been engaged for long years in building up.

The reaction from this exaggerated fame, of course, set in, and it was sharp and severe. The blots in the book were easily hit; its author's unfamiliarity with the stage business of the play was evident enough—even to dunces; so it was a simple matter to write smart articles at the expense of a novelist who laid himself open to the whole battery of conventional criticism. In *Jane Eyre* there was much painting of souls in their naked reality; the writer had gauged depths which the plummet of the common story-teller could never have sounded, and conflicting passions were marshalled on the stage with a masterful daring which Shakespeare might have envied; but the costumes, the conventional bye-play, the scenery, even the wording of the dialogue, were poor enough in all conscience. The merest play-wright or reviewer could have done better in these matters—as the unknown author was soon made to understand. Additional piquancy was given to the attack by the appearance, at the very time when the *Jane Eyre* fever was at its height, of two other novels, written by persons whose

sexless names proclaimed them the brothers or the sisters of Currer Bell. Human nature is not so much changed from what it was in 1847 that one need apologize for the readiness with which the reading world in general, and the critical world in particular, adopted the theory that *Wuthering Heights* and *Agnes Grey* were earlier works from the pen which had given them *Jane Eyre*. In *Wuthering Heights* some of the faults of the other book were carried to an extreme, and some of its conspicuous merits were distorted and exaggerated until they became positive blemishes; whilst *Agnes Grey* was a feeble and commonplace tale which it was easy to condemn. So the author of *Jane Eyre* was compelled to bear not only her own burden, but that of the two stories which had followed the successful novel; and the reviewers—ignorant of the fact that they were killing three birds at a single shot—rejoiced in the larger scope which was thus afforded to their critical energy.

Here and there, indeed, a manful fight on behalf of Currer Bell was made by writers who knew nothing but the name and the book. "It is soul speaking to soul," cried *Fraser's Magazine* in December, 1847; "it is not a book for prudes," added *Blackwood*, a few months later; "it is not a book for effeminate and tasteless men; it is for the enjoyment of a feeling heart and critical understanding." But in the main the verdict of the critics was adverse. It was discovered that the story was improper and immoral; it was said to be filled with descriptions of "courtship after the manner of kangaroos," and to be impregnated with a "heathenish doctrine of religion;" whilst there went up a perfect chorus of reprobation directed against its "coarseness of language," "laxity of tone," "horrid taste," and "sheer rudeness and vulgarity." From the book to the author was of course an easy transition. London had been bewildered, and its literary quidnuncs utterly puzzled, when such a story first came forth inscribed with an unknown name. Many had been the rumors eagerly passed from mouth to mouth as to the real identity of Currer Bell. Upon one point there had, indeed, been something like unanimity among the critics, and the story of *Jane Eyre* had been accepted as some-

thing more than a romance, as a genuine autobiography in which real and sorrowful experiences were related. Even the most hostile critic of the book had acknowledged that "it contained the story of struggles with such intense suffering and sorry as it was sufficient misery to know that any one had conceived, far less passed through." Where then was this wonderful governess to be found? In what obscure hiding-place could the forlorn soul, whose cry of agony had stirred the hearts of readers everywhere, be discovered? We may smile now, with more of sadness than of bitterness, at the base calumnies of the hour, put forth in mere wantonness and levity by a people ever seeking to know some new thing and to taste some new sensation. The favorite theory of the day—a theory duly elaborated and discussed in the most orthodox and respectable of the reviews—was that Jane Eyre and Becky Sharp were merely different portraits of the same character; and that their original was to be found in the person of a discarded mistress of Mr. Thackeray, who had furnished the great author with a model for the heroine of *Vanity Fair*, and had revenged herself upon him by painting him as the Rochester of *Jane Eyre*! It was after dwelling upon this marvellous theory of the authorship of the story that the *Quarterly Review*, with Pecksniffian charity, calmly summed up its conclusions in these memorable words:—"If we ascribe the book to a woman at all, we have no alternative but to ascribe it to one who has for some sufficient reason long forfeited the society of her own sex."

The world knows the truth now. It knows that these bitter and shameful words were applied to one of the truest and purest of women; to a woman who from her birth had led a life of self-sacrifice and patient endurance; to a woman whose affections dwelt only in the sacred shelter of her home, or with companions as pure and worthy as herself; to one of those few women who can pour out all their hearts in converse with their friends, happy in the assurance that years hence the stranger into whose hands their frank confessions may pass will find nothing there that is not loyal, true, and blameless. There was wonder among the critics, wonder too in the gay

world of London, when the secret was revealed, and men were told that the author of *Jane Eyre* was no passionate light-o'-love who had merely transcribed the sad experiences of her own life; but "an austere little Joan of Arc," pure, gentle, and high-minded, of whom Thackeray himself could say that "a great and holy reverence of right and truth seemed to be with her always." The quidnuncs had searched far and wide for the author of *Jane Eyre*; but we may well doubt whether, when the truth came out at last, they were not more than ever mystified by the discovery that Currer Bell was Charlotte Brontë, the young daughter of a country parson in a remote moorland parish of Yorkshire.

That such a woman should have written such a book was more than a nine days' wonder; and for the key to that which is one of the great marvels and mysteries of English literature we must go to Charlotte Brontë's life itself.

III.

There is a striking passage in Mr. Greg's *Enigmas of Life*, in which the influence of external circumstances upon the inner lives of men and women is dwelt upon somewhat minutely, and, by way of example, the connection between religious "conviction" and an imperfect digestion is carefully traced out. That we are the creatures of circumstance can hardly be doubted, nor that our destinies are moulded, just as the coral reefs are built, by the action of innumerable influences, each in itself apparently trivial and insignificant. But the habit which leads men to find a full explanation of the lives of those who have attained exceptional distinction in the circumstances amid which their lot has been cast cannot be said to be a very wholesome or happy one. Few have suffered more cruelly from this trick than the Brontë family. Graphic pictures have been presented to the world of their home among the hills, and of their surroundings in their early years; whilst the public have been asked to believe that some great shadow of gloom rested over their lives from their birth, and that to this fact, and to the influence of the moors, must be attributed, not only the peculiar bent of their genius, but the whole color and shape of their lives. Those who are

thus determined to account for everything that lies out of the range of common experience would do well, before they attempt to analyse the great mystery of genius, to reveal to us the true cause of the superlative excellence of this or that rare *crû*, the secret which gives Johannesburg or Château d'Yquem its glory in the eyes of connoisseurs. Circumstances apparently have little to do with the production of the fragrance and bouquet of these famous wines; for we know that grapes growing close at hand on similar vines and seemingly under precisely similar conditions, warmed by the same sun, refreshed by the same showers, fanned by the same breezes, produce a wine which is comparatively worthless. When the world has expounded this riddle, it will be time enough to deal with that deeper problem of genius on which we are now too apt to lay presumptuous and even violent hands.

The Brontës have suffered grievously from this fashion, inasmuch as their picturesque and striking surroundings have been allowed to obscure our view of the women themselves. We have made a picture of their lives, and have filled in the mere accessories with such pre-Raphaelite minuteness that the distinct individuality of the heroines has been blurred and confused amid the general blaze of vivid color, the crowd of "telling" points. No individual is to be blamed for this fact. The world, as we have seen, was first introduced to "Currer Bell" and her sisters under romantic circumstances; the lives of those simple, sternly-honest women were enveloped from the moment when the public made their acquaintance in a certain color of romantic mystery; and when all had passed away, and the time came for the "many-headed beast" to demand the full satisfaction of its curiosity, it would have nothing but the completion of that romance which from the first it had figured in outline for itself.

Who then does not know the salient points of that strange and touching story which tells us how the author of *Jane Eyre* lived and died? Who is not acquainted with that grim parsonage among the hills, where the sisters dwelt amid such uncongenial and even weird influences; living like recluses in the house of a Protestant pastor; associated

with sorrow and suffering, and terrible pictures of degrading vice, during their blameless maidenhood; constructing an ideal world of their own, and dwelling in it heedless of the real world which was in motion all around them? Who has not been amused and interested by those graphic pictures of Yorkshire life in the last century, in which the local flavor is so intense and piquant, and which are hardly the less interesting because they relate to an order of things which had passed away entirely before ever the Brontës appeared upon the stage? And who has not been moved by the dark tragedy of Branwell Brontë's life, hinted at rather than explicitly stated, in Mrs. Gaskell's story, but yet standing out in such prominence that those who know no better may be forgiven if they regard it as having been the powerful and all-pervading influence which made the career of the sisters what it was? The true charm of the history of the Brontës, however, does not lie in these things. It is not to be found in the surroundings of their lives, remarkable and romantic as they were, but in the women themselves, and in those characteristics of their hearts and their intellects which were independent of the accidents of condition. Charlotte herself would have been the first to repudiate the notion that there was anything strikingly exceptional in their outward circumstances. With a horror of being considered eccentric that amounted to a passion, she united an almost morbid dread of the notice of strangers. If she could ever have imagined that readers throughout the world would come to associate her name, and still more the names of her idolized sisters, with the ruder features of the Yorkshire character, or with such a domestic tragedy as that amid which her unhappy brother's life terminated, her spirit would have arisen in indignant revolt against that which she would have regarded almost in the light of a personal outrage.

And yet if their surroundings at Haworth had comparatively little to do with the development of the genius of the three sisters, it cannot be doubted that two influences which Mrs. Gaskell has rightly made prominent in her book did affect their characters, one in a minor, and the other in a very marked

degree. The influence of the moors is to be traced both in their lives and their works; whilst far more distinctly is to be traced the influence of their father. As to the first there is little to be said in addition to that which all know already. There is a railway station now at Haworth, and all the world therefore can get to the place without difficulty or inconvenience. Yet even to-day, when the engine goes shrieking past it many times between sunrise and sunset, Haworth is not as other places are. A little manufacturing village sheltered in a nook among the hills and moors which stretch from the heart of Yorkshire into the heart of Lancashire, it bears the vivid impress of its situation. The moors which lie around it for miles on every side are superb during the summer and autumn months. Then Haworth is in its glory: a grey stone hamlet set in the midst of a vast sea of odorous purple, and swept by breezes which bear into its winding street the hum of the bees and the fragrance of the heather. But it is in the drear, leaden days of winter, when the moors are covered with snow, that we see what Haworth really is. Then we know that this is a place apart from the outer world; even the railway seems to have failed to bring it into the midst of that great West Riding which lies close at hand with its busy mills and multitudes; and the dullest therefore can understand that in the days when the railway was not, and Haworth lay quite by itself, neglected and unseen in its upland valley, its people must have been blessed by some at least of those insular peculiarities which distinguished the villagers of Zermatt and Pontresina before the flood of summer tourists had swept into those comparatively remote crannies of the Alps. Nurtured among these lonely moors, and accustomed, as all dwellers on thinly-peopled hillsides are, to study the skies and the weather, as the inhabitants of towns and plains study the faces of men and women, the Brontës unquestionably drew their love of nature, their affection for tempestuous winds and warring clouds, from their residence at Haworth.

But this influence was trivial compared with the hereditary influences of their father's character. Few more remarkable personalities than that of the Rev.

Patrick Brontë have obtruded themselves upon the smooth uniformity of modern society. The readers of Mrs. Gaskell's biography know that the incumbent of Haworth was an eccentric man, but the full measure of his eccentricity and waywardness has never yet been revealed to the world. He was an Irishman by birth, but when still a young man he had gone to Yorkshire as a curate, and in Yorkshire he remained to the end of his days. He appears to have been a strange compound of good and evil. That he was not without some good is acknowledged by all who knew him. He had kindly feelings towards most people, and he delighted in the stern rectitude which distinguished many of his Yorkshire flock. When his daughter became famous, no one was better pleased at the circumstance than he was. He cut out of every newspaper every scrap which referred to her; he was proud of her achievements, proud of her intellect, and jealous for her reputation. But throughout his whole life there was but one person with whom he had any real sympathy, and that person was himself. Passionate, self-willed, vain, habitually cold and distant in his demeanor to those of his own household, he exhibited in a marked degree many of the characteristics which Charlotte Brontë afterwards sketched in the portrait of the Mr. Helston of *Shirley*. The stranger who encountered him found a scrupulously polite gentleman of the old school, who was garrulous about his past life, and who needed nothing more than the stimulus of a glass of wine to become talkative on the subject of his conquests over the hearts of the ladies of his congregation. As you listened to the quaintly-attired old man who chatted on with inexhaustible volubility, you possibly conceived the idea that he was a mere fribble, gay, conceited, harmless; but at odd times a searching glance from the keen, deep-sunk eyes warned you that you also were being weighed in the balance by your companion, and that this assumption of light-hearted vanity was far from revealing the real man to you. Only those who dwelt under the same roof knew him as he really was. Among the many stories told of him by his children there is one relating to the meek and gentle woman who was his wife, and

whose lot it was to submit to persistent coldness and neglect. Somebody had given Mrs. Brontë a very pretty dress, and her husband, who was as proud as he was self-willed, had taken offence at the gift. A word to his wife, who lived in habitual dread of her lordly master, would have secured all he wanted; but in his passionate determination that she should not wear the obnoxious garment, he deliberately cut it to pieces and presented her with the tattered fragments. Even during his wife's lifetime he formed the habit of taking his meals alone; he constantly carried loaded pistols in his pockets, and when excited he would fire these at the doors of the outhouses so that the villagers were quite accustomed to the sound of pistol-shots at any hour of the day in their pastor's house. It would be a mistake to suppose that violence was one of the weapons to which Mr. Brontë habitually resorted. However stern and peremptory might be his dealings with his wife (who soon left him to spend the remainder of his life in a dreary widowerhood), his general policy was to secure his end by craft rather than by force. A profound belief in his own superior wisdom was conspicuous among his characteristics, and he felt convinced that no one was too clever to be outwitted by his diplomacy. He had also an amazing persistency, which led him to pursue any course on which he once embarked with dogged determination. It happened in later years, when his strength was failing, and when at last he began to see his daughter in her true light, that he quarrelled with her regarding the character of one of their friends. The daughter, always dutiful and respectful, found that any effort to stem the torrent of his bitter and unjust wrath when he spoke of the friend who had offended him, was attended by consequences which were positively dangerous. The veins of his forehead swelled, his eyes glared, his voice shook, and she was fain to submit lest her father's passion should prove fatal to him. But when, wounded beyond endurance by his violence and injustice, she withdrew for a few days from her home, and told her father that she would receive no letters from him in which this friend's name was mentioned, the old man's cunning took the place of passion. He wrote long and affectionate

letters to her on general subjects; but accompanying each letter was a little slip of paper, which professed to be a note from Charlotte's dog "Flossy" to his "much-respected and beloved mistress," in which the dog, declaring that he saw "a good deal of human nature that was hid from those who had the gift of language," was made to repeat the attacks upon the obnoxious person which Mr. Brontë dared no longer make in his own character.

It was to the care of such a father as this, in the midst of the rude and uncongenial society of the lonely manufacturing village, that six motherless children, five daughters and one son, were left in the year 1821. The parson's children were not allowed to associate with their little neighbors in the hamlet; their aunt, who came to the parsonage after their mother's death, had scarcely more sympathy with them than their father himself; their only friend was the rough but kindly servant Tabby, who pitied the bairns without understanding them, and whose acts of graciousness were too often of such a character as to give them more pain than pleasure. So they grew up strange, lonely, old-fashioned children, with absolutely no knowledge of the world outside; so quiet and demure in their habits that years afterwards, when they invited some of their Sunday scholars up to the parsonage, and wished to amuse them, they found that they had to ask the scholars to teach them how to play—they had never learned. Carefully secluded from the rest of the world, the little Brontë children found out fashions of their own in the way of amusement, and marvellous fashions they were. Whilst they were still in the nursery, when the oldest of the family, Maria, was barely nine years old, and Charlotte, the third, was just six, they had begun to take a quaint interest in literature and politics. Heaven knows who it was who first told these wonderful pigmies of the great deeds of a Wellington or the crimes of a Bonaparte; but at an age when other children are generally busy with their bricks or their dolls, and when all life's interests are confined for them within the walls of a nursery, these marvellous Brontës were discussing the life of the great Duke, and maintaining the Tory

cause as ardently as the oldest and sturdiest of the village politicians in the neighboring inn.

There is a touching story of Charlotte at six years old, which gives us some notion of the ideal life led by the forlorn little girl at this time, when, her two elder sisters having been sent to school, she found herself living at home, the eldest of the motherless brood. She had read the *Pilgrim's Progress*, and had been fascinated, young as she was, by that wondrous allegory. Everything in it was to her true and real; her little heart had gone forth with Christian on his pilgrimage to the Golden City, her bright young mind had been fired by the Bedford Tinker's description of the glories of the Celestial Place; and she made up her mind that she too would escape from the City of Destruction and gain the haven towards which the weary spirits of every age have turned with eager longing. But where was this glittering city with its streets of gold, its gates of pearl, its walls of precious stones, its streams of life and throne of light? Poor little girl! The only place which seemed to her to answer Bunyan's description of the celestial town was one which she had heard the servants discussing with enthusiasm in the kitchen, and its name was Bradford! So to Bradford little Charlotte Brontë, escaping from that Haworth Parsonage which she believed to be a doomed spot, set off one day in 1822. Ingenious persons may speculate if they please upon the sore disappointment which awaited her when, like older people, reaching the place which she had imagined to be Heaven, she found that it was only Bradford. But she never even reached her imaginary Golden City. When her tender feet had carried her a mile along the road, she came to a spot where overhanging trees made the highway dark and gloomy; she imagined that she had come to the Valley of the Shadow of Death, and fearing to go forward, was presently discovered by her nurse cowering by the roadside.

Of the school-days of the Brontës nothing need be said here. Every reader of *Jane Eyre* knows what Charlotte Brontë herself thought of that charitable institution to which she has given so unenviable a notoriety. There she lost her oldest sister, whose fate is described in

the tragic tale of Helen Burns; and it was whilst she was at this place that her second sister, Elizabeth, also died. Only one thing need be added to this dismal record of the stay at Cowan Bridge. During the whole time of their sojourn there the young Brontës scarcely ever knew what it was to be free from the pangs of hunger.

Charlotte was now the head of the little family; the remaining members of which were her brother Branwell and her sisters Emily and Anne. Mrs. Gaskell has given the world a vivid picture of the life which these four survivors from the hardships of Cowan Bridge led between the years 1825 and 1831. They spent those years at Haworth, almost without care or sympathy. Their father saw little in their lot to interest him, nothing to drag him out of his selfish absorption in his own pursuits; their aunt, a permanent invalid, conceived that her duty was accomplished when she had taught them a few lessons and insisted on their doing a certain amount of needlework every day. For the rest they were left to themselves, and thus early they showed the bent of their genius by spending their time in writing novels.

Mrs. Gaskell has given us some idea of the character of these juvenile performances in a series of extracts which sufficiently indicate their rare merit. She has, however, paid exclusive attention to Charlotte's productions. All readers of the Brontë story will remember the account of *The Play of the Islanders* and other remarkable specimens, showing with what real vigor and originality Charlotte could handle her pen whilst she was still in the first year of her teens; but those few persons who have seen the whole of the juvenile library of the family, bear testimony to the fact that Branwell and Emily were at least as industrious and successful as Charlotte herself. Indeed, even at this early age, the *bizarre* character of Emily's genius was beginning to manifest itself, and her leaning towards weird and supernatural effects was exhibited whilst she composed her first fairy tales within the walls of her nursery. It may be well to bear in mind the frequency with which the critics have charged Charlotte Brontë with exaggerating the precocity of children.

What we know of the early days of the Brontës proves that what would have been exaggeration in any other person was in the case of Charlotte nothing but a truthful reproduction of her own experiences.

IV.

The years have slipped away and the Brontës are no longer children. They have passed out of that strange condition of premature activity in which their brains were so busy, their lives so much at variance with the lives of others of their age; they have even "finished" their education, according to the foolish phrase of the world, and having made some acquaintances and a couple of friends at good Miss Wooler's school at Roehead, Charlotte is again at home, young, hopeful, and in her own way merry, waiting with her brother and her sister till that mystery of life which seems filled with hidden charms to those who still have it all before them, shall be revealed.

One bright June morning, in 1833, a handsome carriage and pair is standing opposite the Devonshire Arms at Bolton Bridge, the spot loved by all anglers and artists who know anything of the scenery of the Wharfe. In the carriage with some companions is a young girl, whose face, figure, and manner may be conjured up by all who have read *Shirley*; for this pleasant, comely Yorkshire maiden, as we see her on this particular morning, is identical with the Caroline Helston who figures in the pages of that novel. Miss N—— is waiting for her quondam school-fellow and present bosom friend, Charlotte Brontë, who is coming with her brother and sisters to join in an excursion to the enchanted site of Bolton Abbey hard by. Presently, on the steep road which stretches across the moors to Keighley, the sound of wheels is heard, mingled with the merry speech and merrier laughter of fresh young voices. Shall we go forward unseen and study the approaching travellers whilst they are still upon the road? Their conveyance is no handsome carriage, but a rickety dog-cart, unmistakably betraying its neighborhood to the carts and ploughs of some rural farm-yard. The horse, freshly taken from the fields, is driven by a youth

who, in spite of his countrified dress, is no mere bumpkin. His shock of red hair hangs down in somewhat ragged locks behind his ears, for Branwell Brontë esteems himself a genius and a poet, and, following the fashion of the times, has that abhorrence for the barber's shears which genius is supposed to affect. But the lad's face is a handsome and a striking one; full of Celtic fire and humor, untouched by the slightest shade of care, giving one the impression of somebody altogether hopeful, promising, even brilliant. How gaily he jokes with his three sisters; with what inexhaustible volubility he pours out quotations from his favorite poets, applying them to the lovely scene around him; and with what a mischievous delight, in his superior nerve and mettle, he attempts feats of charioteeing which fill the timid heart of the youngest of the party with sudden terrors! Beside him, in a dress of marvellous plainness and ugliness, stamped with the brand "home-made" in characters which none can mistake, is the eldest of the sisters. Charlotte is talking too; there are bright smiles upon her face; she is enjoying everything around her, the splendid morning, the charms of leafy trees and budding roses, and the ever-musical stream; most of all, perhaps, the charm of her brother's society, and the expectation of that coming meeting with her friend, which is so near at hand. Behind sit a pretty little girl, with fine complexion and delicate regular features, whom the stranger would at once pick out as the beauty of the company, and a tall, rather angular figure, clad in a dress exactly resembling Charlotte's. Emily Brontë does not talk so much as the rest of the party, but her wonderful eyes, brilliant and unfathomable as the pool at the foot of a waterfall, but radiant also with a wealth of tenderness and warmth, show how her soul is expanding under the influences of the scene; how quick she is to note the least prominent of the beauties around her, how intense is her enjoyment of the songs of the birds, the brilliancy of the sunshine, the rich scent of the flower-bespangled hedge-rows. If she does not, like Charlotte and Anne, meet her brother's ceaseless flood of sparkling words with opposing currents of speech, she utters at times a strange,

deep guttural sound which those who know her best interpret as the language of a joy too deep for articulate expression. Gaze at them as they pass you in the quiet road; and acknowledge that in spite of their rough and even uncouth exteriors, a happier four could hardly be met with in this favorite haunt of pleasure-seekers during a long summer's day.

Suddenly the dog-cart rattles noisily into the open space in front of the Devonshire Arms, and the Brontës see the carriage and its occupants. In an instant there is silence; Branwell contrasts his humble equipage with that which already stands at the inn door, and a flush of mortified pride colors his face; the sisters scarcely note this contrast, but to their dismay they see that their friend is not alone, and each draws a long deep breath, and prepares for that fiercest of all the ordeals they know, a meeting with entire strangers. The laughter is stilled; even Branwell's volubility is at an end; the glad light dies out of their eyes, and when they alight and submit to the process of being introduced to Miss N——'s companions, their faces are as dull and commonplace as their dresses. It is no imaginary scene we have been watching. Miss N—— still recalls that painful moment when the merry talk and laughter of her friends were quenched at sight of the company awaiting them, and when throughout a day to which all had looked forward with anticipations of delight, the three Brontës clung to each other or to their friend, scarcely venturing to speak above a whisper, and betraying in every look and word the positive agony which filled their hearts when a stranger approached them. It was this excessive shyness in the company of those who were unfamiliar to them which was the most marked characteristic of the sisters. The weakness was as much physical as moral; and those who suppose that it was accompanied by any morbid depression of spirits, or any lack of vigor and liveliness when the incubus of a stranger's presence was removed, entirely mistake their true character. Unhappily, first impressions are always strongest, and running through the whole of Mrs. Gaskell's story, may be seen the impression produced at her first meeting with Charlotte Brontë by her nervous shrinking and

awkwardness in the midst of unknown faces.

It was not thus with those who, brought into the closest of all fellowship with her, the fellowship of school society, knew the secrets of her heart far better than did any who became acquainted with her in after life. To such the real Charlotte Brontë, who knew no timidity in their presence, was a bold, clever, outspoken and impulsive girl; ready to laugh with the merriest, and not even indisposed to join in practical jokes with the rest of her schoolfellows. The picture we get in the *Life* is that of a victim to secret terrors and superstitious fancies. The real Charlotte Brontë, when stories were current as to the presence of a ghost in the upper chambers of the old school-house at Roehead, did not hesitate to go up to these rooms alone and in the darkness of a winter's night, leaving her companions shivering in terror round the fire downstairs. When she had left school, and began that correspondence with Miss N—— which is the great source of our knowledge, not merely of the course of her life, but of the secrets of her heart, it must not be supposed that she wrote always in that serious spirit which pervades most of the letters quoted by Mrs. Gaskell. On the contrary, those who have access to the letters will find that even some of the passages given in the *Life* are allied to sentences showing that the frame of mind in which they were written was very different from that which it appears to have been. The following letter, written from Haworth in the beginning of 1835, is an example:—

"Well, here I am as completely separated from you as if a hundred, instead of seventeen, miles intervened between us. I can neither hear you nor see you nor feel you. You are become a mere thought, an unsubstantial impression on the memory, which, however, is happily incapable of erasure. My journey home was rather melancholy, and would have been very much so but for the presence and conversation of my worthy companion. I found him a very intelligent man. He told me the adventures of his sailor's life, his shipwreck, and the hurricane he had witnessed in the West Indies, with a much better flow of language than many of far greater pretensions are masters of. I thought he appeared a little dismayed by the wildness of the country round Haworth, and I imagine he has carried back a pretty report of it.

"What do you think of the course politics

are taking? I make this inquiry because I now think you have a wholesome interest in the matter; formerly you did not care greatly about it. Baines, you see, is triumphant. Wretch! I am a hearty hater, and if there is any one I thoroughly abhor it is that man. But the Opposition is divided. Red-hots and luke-warms; and the Duke (par excellence *the Duke*) and Sir Robert Peel show no signs of insecurity, although they have been twice beat. So 'courage, mon amie!' Heaven defend the right, as the old cavaliers used to say before they joined battle. Now, Ellen, laugh heartily at all that rodomontade. But you have brought it on yourself. Don't you remember telling me to write such letters to you as I wrote to Mary? There's a specimen! Hereafter should follow a long disquisition on books; but I'll spare you that."

Those who turn to Mrs. Gaskell's *Life* will find one of the sentences in this letter quoted, but without the burst of laughter over "all that rodomontade" at the end which shows that Charlotte's interest in politics was not unmingled with the happy levity of youth. Still more striking as an illustration of her true character, with its infinite variety of moods, its sudden transitions from grave to gay, is the letter I now quote:—

"Last Saturday afternoon, being in one of my sentimental humors, I sat down and wrote to you such a note as I ought to have written to none but M——, who is nearly as mad as myself; to-day, when I glanced it over, it occurred to me that Ellen's calm eye would look at this with scorn, so I determined to concoct some production more fit for the inspection of common sense. I will not tell you all I think and feel about you, Ellen. I will preserve unbroken that reserve which alone enables me to maintain a decent character for judgment; but for that I should long ago have been set down by all who know me as a Frenchified fool. You have been very kind to me of late, and gentle; and you have spared me those little sallies of ridicule which, owing to my miserable and wretched touchiness of character, used formerly to make me wince as if I had been touched with a hot iron; things that nobody else cares for enter into my mind and rankle there like venom. I know these feelings are absurd, and therefore I try to hide them; but they only sting the deeper for concealment, and I'm an idiot! Ellen, I wish I could live with you always, I begin to cling to you more fondly than ever I did. If we had but a cottage and a competency of our own, I do think we might live and love on till death, without being dependent on any third person for happiness."

Mrs. Gaskell has made a very partial and imperfect use of this letter by quoting merely from the words "You have been very kind to me of late," down to "they only sting the deeper for conceal-

ment." Thus it will be seen that an importance is given to an evanescent mood which it was far from meriting, and that lighter side to Charlotte's character which was prominent enough to her nearest and dearest friends is entirely concealed from the outer world. Again, I say, we must not blame Mrs. Gaskell. Such sentences as those which she omitted from the letter I have just given are not only entirely inconsistent with that ideal portrait of *Currer Bell* which the world had formed for itself out of the bare materials in existence during the author's lifetime; but are also utterly at variance with Mrs. Gaskell's personal conception of Charlotte Brontë's character, founded upon her brief acquaintance with her during her years of loneliness and fame.

The quick transitions which marked her moods in converse with her friends may be traced all through her letters to Miss N—. The quotations I have already made show how suddenly on the same page she passes from gaiety to sadness; and so her letters, dealing as they do with an endless variety of topics, reflect only the mood of the writer at the moment that she penned them, and it is only by reading and studying the whole, not by selecting those which reflect a particular phase of her character, that we can complete the portrait we would fain produce.

Here are some extracts from letters which are not to be found in the *Life*, and which illustrate what I have said. They were all written between the beginning of 1832 and the end of 1835:—

"Tell M— I hope she will derive benefit from the perusal of Cobbett's lucubrations; but I beg she will on no account burden her memory with passages to be repeated for my edification, lest I should not fully appreciate either her kindness or their merit; since that worthy personage and his principles, whether private or political, are no great favorites of mine."

"I am really very much obliged to you," she writes in September, 1832, "for your well-filled and *very* interesting letter. It forms a striking contrast to my brief meagre epistles; but I know you will excuse the utter dearth of news visible in them when you consider the situation in which I am placed, quite out of the reach of all intelligence except what I obtain through the medium of the newspapers, and I believe you would not find much to interest you in a political discussion, or a summary of the accidents of the week.

... I am sorry, very sorry, that Miss — has turned out to be so different from what you thought her; but, my dearest Ellen, you must never expect perfection in this world; and I know your naturally confiding and affectionate disposition has led you to imagine that Miss — was almost faultless. ... I think, dearest Ellen, our friendship is destined to form an exception to the general rule regarding school friendships. At least I know that absence has not in the least abated the sisterly affection which I feel towards you."

"Your last letter revealed a state of mind which promised much. As I read it, I could not help wishing that my own feelings more nearly resembled yours; but unhappily all the good thoughts that enter my mind evaporate almost before I have had time to ascertain their existence. Every right resolution which I form is so transient, so fragile, and so easily broken, that I sometimes fear I shall never be what I ought."

"I write a hasty line to assure you we shall be happy to see you on the day you mention. As you are now acquainted with the neighborhood and its total want of society, and with our plain, monotonous mode of life, I do not fear so much as I used to do, that you will be disappointed with the dulness and sameness of your visit. One thing however will make the daily routine more unvaried than ever. Branwell, who used to enliven us, is to leave us in a few days, and enter the situation of a private tutor in the neighborhood of U—. How he will like to settle remains yet to be seen. At present he is full of hope and resolution. I, who know his variable nature and his strong turn for active life, dare not be too sanguine. We are as busy as possible in preparing for his departure, and shirt-making and collar-stitching fully occupy our time."

"April, 1835.

"The election! the election! that cry has rung even among our lonely hills like the blast of a trumpet. How has it been round the populous neighborhood of B—? Under what banner have your brothers ranged themselves? The Blue or the Yellow? Use your influence with them; entreat them, if it be necessary on your knees, to stand by their country and religion in this day of danger! ... Stuart Wortley, the son of the most patriotic patrician Yorkshire owns, must be elected the representative of his native province. Lord Morpeth was at Haworth last week, and I saw him. My opinion of his lordship is recorded in a letter I wrote yesterday to Mary. It is not worth writing over again, so I will not trouble you with it here."

Even these brief extracts will show that Charlotte Brontë's life at this time was not a morbid one. These years between 1832 and 1835 must be counted among the happiest of her life—of all the lives of the little household at Haworth, in fact. The young people were

accustomed to their father's coldness and eccentricity, and to their aunt's dainty distaste for all Northern customs and Northern people, themselves included. Shy they were and peculiar, alike in their modes of life and their modes of thought; but there was a wholesome, healthy happiness about all of them that gave promise of peaceful lives hereafter. Some literary efforts of a humble kind brightened their hopes at this time. Charlotte had written some juvenile poems (not now worth reprinting), and she sought the opinion of Southey upon them. The poet laureate gave her a kindly and considerate answer, which did not encourage her to persevere in these efforts; nor was an attempt by Branwell to secure the patronage of Wordsworth for some productions of his own more successful. Had anybody ventured into the wilds of Haworth parish at this new year of 1835, and made acquaintance with the parson's family, it is easy to say upon whom the attention of the stranger would have been riveted. Branwell Brontë, of whom casual mention is made in one of the foregoing letters, was the hope and pride of the little household. All who knew him at this time bear testimony to his remarkable talents, his striking graces. Small in stature like Charlotte herself, he was endowed with a rare personal beauty. But it was in his intellectual gifts that his chief charm was found. Even his father's dull parishioners recognized the fire of genius in the lad; and any one who cares to go to Haworth now and inquire into the story of the Brontës, will find that the most vivid reminiscences, the fondest memories of the older people in the village, centre in this hapless youth. Ambitious and clever, he seemed destined to play a considerable part in the world. His conversational powers were remarkable; he gave promise of more than ordinary ability as an artist, and he had even as a boy written verses of no common power. Among other accomplishments, more curious than useful, of which he could boast, was the ability to write two letters simultaneously. It is but a small trait in the history of this remarkable family, yet it deserves to be noticed, that its least successful member excelled Napoleon himself in one respect. The great conqueror could dictate half-a-dozen letters concurrently to his secreta-

ries. Branwell Brontë could do more than this. With a pen in each hand, he could write two different letters at the same moment.

Charlotte was Branwell's senior by one year. In 1835, when in her nineteenth year, she was by no means the unattractive person she has been represented as being. There is a little caricature sketched by herself lying before me as I write. In it all the more awkward of her physical points are ingeniously exaggerated. The prominent forehead bulges out in an aggressive manner, suggestive of hydrocephalus, the nose, "tip-tilted like the petal of a flower," and the mouth are made unnecessarily large; whilst the little figure is clumsy and ungainly. But though she could never pretend to beauty, she had redeeming features, her eyes, hair, and massive forehead all being attractive points. Emily, who was two years her junior, had, like Charlotte, a bad complexion; but she was tall and well-formed, whilst her eyes were of remarkable beauty. All through her life her temperament was more than merely peculiar. She inherited not a little of her father's eccentricity, untempered by her father's *savoir faire*. Her aversion to strangers has been already mentioned. When the curates, who formed the only society of Haworth, found their way to the parsonage, she avoided them as though they had brought the pestilence in their train; on the rare occasions when she went out into the world she would sit absolutely silent in the company of those who were unfamiliar to her. So intense was this reserve that even in her own family, where alone she was at ease, something like dread was mingled with the affection felt towards her. On one occasion, whilst Charlotte's friend was visiting the parsonage, Charlotte herself was unable through illness to take any walks with her. To the amazement of the household Emily volunteered to accompany Miss N— on a ramble over the moors. They set off together, and the girl threw aside her reserve and talked with a freedom and vigor which gave evidence of the real strength of her character. Her companion was charmed with her intelligence and geniality. But on returning to the parsonage Charlotte was found awaiting

them, and as soon as she had a chance of doing so she anxiously put to Miss N—— the question, "How did Emily behave herself?" It was the first time she had ever been known to invite the company of any one outside the narrow limits of the family circle. Her chief delight was to roam on the moors, followed by her dogs, to whom she would whistle in masculine fashion. Her heart indeed was given to these dumb creatures of the earth. She never forgave those who ill-treated them, nor trusted those whom they disliked. One is reminded of Shelley's *Sensitive Plant*, by some traits of Emily Brontë:

"If the flowers had been her own infants she
Could never have nursed them more tenderly;"

and, like the lady of the poem, her tenderness and charity could reach even

"—the poor banished insects, whose intent,

Although they did ill, was innocent."

One instance of her remarkable personal courage is related in *Shirley*, where she herself is sketched under the character of the heroine. It is her adventure with the mad dog which bit her at the door of the parsonage kitchen whilst she was offering it water. The brave girl took an iron from the fire where it chanced to be heating, and immediately cauterized the wound on her arm, making a broad, deep scar, which was there until the day of her death. Not until many weeks after did she tell her sisters what had happened. Passionately fond of her home among the hills, and of the rough Yorkshire people among whom she had been reared, she sickened and pined away when absent from Haworth. A strange untamed and untamable character was hers; and none but her two sisters ever seem to have appreciated her remarkable merits, or to have recognized the fine though immature genius which shows itself in every line of the weird story of *Wuthering Heights*.

Anne, the youngest of the family, had beauty in addition to her other gifts. Intellectually she was greatly inferior to her sisters; but her mildness and sweetness of temperament won the affections of many who were repelled by the harsher exteriors of Charlotte and Emily.

This was the family which lived hap-

pily and quietly among the hills during those years when life with its vicissitudes still lay in the distance. Gay their existence could not be called; but their letters show that it was unquestionably peaceful, happy, and wholesome.

V.

Moved by the hope of lightening the family expenses and enabling Branwell to get a thorough artistic training at the Royal Academy, Charlotte resolved to go out as a governess. Her first "place" was at her old school at Roe-head, where she was with her friend Miss Wooler, and where she was also very near the home of her confidante, Miss N——. Emily went with her for a time; but she soon sickened and pined for the moors, and after a trial of but a few months she returned to Haworth. A great deal of sympathy has been bestowed upon the Brontës in connection with their days as governesses; nor am I prepared to say that this sympathy is wholly misplaced. Their reserve, their affection for each other, their ignorance of the world, combined to make "the cup of life as it is mixed for the class termed governesses"—to use Charlotte's own phrase—particularly distasteful to them. But it is a mistake to suppose that they were treated with harshness during their governess life, or that Charlotte, at least, felt her trials at all unbearable. It was decidedly unpleasant to sacrifice the independence and the family companionship of Haworth for drudgery and loneliness in the household of a stranger; but it was a duty, and as such it was accepted without repining by two, at least, of the sisters. Emily's peculiar temperament made her quite unfitted for life among strangers; she made many attempts to overcome her reserve, but all were unavailing; and after a brief experience in one or two families in different parts of Yorkshire, she returned to Haworth to reside there permanently as her father's housekeeper. There is no need to dwell upon this episode in the lives of the Brontës. They were living among unfamiliar faces, and had little temptation to display themselves in their true characters, but extracts from a few of Charlotte's letters to her friends will show something of the course of her thought at this time. With the excep-

tion of a detached sentence or two these letters will be quite new to the readers of Mrs. Gaskell's *Life* :—

"I have been waiting for an opportunity of sending a letter to you as you wished; but as no such opportunity offers itself, I have at length determined to write to you by post, fearing that if I delayed any longer you would attribute my tardiness to indifference. I can scarcely realize the distance that lies between us, or the length of time which may elapse before we meet again. Now, Ellen, I have no news to tell you, no changes to communicate. My life since I saw you last has passed away as monotonously and unvaryingly as ever—nothing but teach, teach, teach, from morning till night. The greatest variety I ever have is afforded by a letter from you, a call from the T—'s, or by meeting with a pleasant new book. The *Life of Oberlin* and Legh Richmond's *Domestic Portraiture*, are the last of this description I have perused. The latter work strongly attracted and strangely fascinated my attention. Beg, borrow, or steal it without delay; and read the *Memoir of Richmond*. That short record of a brief and uneventful life I shall never forget. It is beautiful, not on account of the language in which it is written, not on account of the incidents it details, but because of the simple narration it gives of the life and death of a young, talented, sincere Christian. Get the book, Ellen (I wish I had it to give you), read it, and tell me what you think of it. Yesterday I heard that you had been ill since you were in London. I hope you are better now. Are you any happier than you were? Try to reconcile your mind to circumstances, and exert the quiet fortitude of which I know you are not destitute. Your absence leaves a sort of vacancy in my feelings which nothing has as yet offered of sufficient interest to supply. I do not forget ten o'clock. I remember it every night, and if a sincere petition for your welfare will do you any good you will be benefited. I know the Bible says: 'The prayer of the righteous availeth much,' and I am not righteous. Nevertheless I believe God despises no application that is uttered in sincerity. My own dear E—, good-bye. I can write no more, for I am called to a less pleasant avocation."

"DEWSBURY MOOR, Oct. 2, 1836.

"I should have written to you a week ago, but my time has of late been so wholly taken up that till now I have really not had an opportunity of answering your last letter. I assure you I feel the kindness of so early a reply to my tardy correspondence. It gave me a sting of self-reproach. . . . My sister Emily is gone into a situation as teacher in a large school of near forty pupils near Halifax. I have had one letter from her since her departure. It gives an appalling account of her duties. Hard labor from six in the morning till near eleven at night, with only one half-hour of exercise between. This is slavery. I fear she will never stand it. It gives me sincere pleasure, my dear Ellen, to

learn that you have at last found a few associates of congenial minds. I cannot conceive a life more dreary than that passed amidst sights, sounds, and companions all alien to the nature within us. From the tenor of your letters it seems that your mind remains fixed as it ever was, in no wise dazzled by novelty or warped by evil example. I am thankful for it. I could not help smiling at the paragraphs which related to—. There was in them a touch of the genuine unworldly simplicity which forms part of your character. Ellen, depend upon it, all people have their dark side. Though some possess the power of throwing a fair veil over the defects, close acquaintance slowly removes the screen, and one by one the blots appear; till at last we see the pattern of perfection all slurred over with stains which even affection cannot efface."

The affectionate commendations of her friend are constantly accompanied by references of a very different character to herself.

"If I like people," she says in one of her letters, "it is my nature to tell them so, and I am not afraid of offering incense to your vanity. It is from religion that you derive your chief charm, and may its influence always preserve you as pure, as unassuming, and as benevolent in thought and deed as you are now. What am I compared to you? I feel my own utter worthlessness when I make the comparison. I'm a very coarse, commonplace wretch! I have some qualities that make me very miserable, some feelings that you can have no participation in—that few, very few people in the world can at all understand. I don't pride myself on these peculiarities. I strive to conceal and suppress them as much as I can, but they burst out sometimes, and then those who see the explosion despise me, and I hate myself for days afterwards."

"All my notes to you, Ellen, are written in a hurry. I am now snatching an opportunity. Mr. J— is here; by his means it will be transmitted to Miss E—, by her means to X—, by his means to you. I do not blame you for not coming to see me. I am sure you have been prevented by sufficient reasons; but I do long to see you, and I hope I shall be gratified momentarily, at least, ere long. Next Friday, if all be well, I shall go to G—. On Sunday I hope I shall at least catch a glimpse of you. Week after week I have lived on the expectation of your coming. Week after week I have been disappointed. I have not regretted what I said in my last note to you. The confession was wrung from me by sympathy and kindness, such as I can never be sufficiently thankful for. I feel in a strange state of mind; still gloomy, but not despairing. I keep trying to do right, checking wrong feelings, repressing wrong thoughts—but still—every instant I find myself going astray. I have a constant tendency to scorn people who are far better than I am. A horror at the idea of becoming one of a certain

set—a dread lest if I made the slightest profession I should sink at once into Phariseism, merge wholly in the ranks of the self-righteous. In writing at this moment I feel an irksome disgust at the idea of using a single phrase that sounds like religious cant. I abhor myself; I despise myself. If the doctrine of Calvin be true, I am already an outcast. You cannot imagine how hard, rebellious, and intractable all my feelings are. When I begin to study on the subject I almost grow blasphemous, atheistical in my sentiments. Don't desert me—don't be horrified at me. You know what I am. I wish I could see you, my darling. I have lavished the warmest affections of a very hot, tenacious heart upon you. If you grow cold it is over."

Here it will be seen that the religious struggle was renewed. The woman who was afterwards to be accused of "heathenism" was going through tortures such as Cowper knew in his darkest hours, and, like him, was acquiring faith, humility, and resignation in the midst of the conflict. But such letters as this are only episodic; in general she writes cheerfully, sometimes even merrily.

What would the *Quarterly Reviewer* and the other charitable people, who openly declared their conviction that the author of *Jane Eyre* was an improper person, who had written an improper book, have said had they been told that she had written the following letter on the subject of her first offer of marriage—written it, too, at the time when she was a governess, and in spite of the fact that the offer opened up to her a way of escape from all anxiety as to her future life?

"You ask me whether I have received a letter from T—. I have about a week since. The contents, I confess, did a little surprise me; but I kept them to myself, and unless you had questioned me on the subject I would never have adverted to it. T— says he is comfortably settled at —, and that his health is much improved. He then intimates that in due time he will want a wife, and frankly asks me to be that wife. Altogether the letter is written without cant or flattery, and in a common-sense style which does credit to his judgment. Now there were in this proposal some things that might have proved a strong temptation. I thought if I were to marry so — could live with me, and how happy I should be. But again I asked myself two questions: Do I love T— as much as a woman ought to love her husband? Am I the person best qualified to make him happy? Alas! my conscience answered 'no' to both these questions. I felt that though I esteemed T—, though I had a kindly leaning towards him, because he is an amiable,

well-disposed man, yet I had not, and never could have, that intense attachment which would make me willing to die for him—and if ever I marry it must be in that light of adoration that I will regard my husband. Ten to one I shall never have the chance again; but *n'importe*. Moreover I was aware he knew so little of me he could hardly be conscious to whom he was writing. Why it would startle him to see me in my natural home character. He would think I was a wild, romantic enthusiast indeed. I could not sit all day long making a grave face before my husband. I would laugh and satirize, and say whatever came into my head first; and if he were a clever man and loved me, the whole world weighed in the balance against his smallest wish would be light as air. Could I, knowing my mind to be such as that, conscientiously say that I would take a grave, quiet young man like T—? No; it would have been deceiving him, and deception of that sort is beneath me. So I wrote a long letter back in which I expressed my refusal as gently as I could, and also candidly avowed my reasons for that refusal. I described to him, too, the sort of character I thought would suit him for a wife."

The girl who could thus calmly decline a more than merely "eligible offer," and thus honestly state her reasons for doing so to the friend she trusted, was strangely different from the author of *Jane Eyre* pictured by the critics and the public. Perhaps the full cost of the refusal related in the foregoing letter is only made clear when it is brought into contrast with such a confession as the following, made very soon afterwards:—

"I am miserable when I allow myself to dwell on the necessity of spending my life as a governess. The chief requisite for that station seems to me to be the power of taking things easily when they come, and of making oneself comfortable and at home wherever one may chance to be—qualities in which all our family are singularly deficient. I know I cannot live with a person like Mrs. —; but I hope all women are not like her, and my motto is 'Try again.'"

From one of her situations as governess in a private family (she had long since left the kind shelter of Miss Wooler's house) she writes in 1841 a series of letters showing how little she relished the "cup of life as it is mixed for the class termed governesses."

"It is twelve o'clock at night; but I must just write you a word before I go to bed. If you think I'm going to refuse your invitation, or if you sent it me with that idea, you're mistaken. As soon as I had read your shabby little note, I gathered up my spirits directly, walked on the impulse of the moment into

Mrs. —'s presence, popped the question, and for two minutes received no answer. 'Will she refuse me when I work so hard for her?' thought I. 'Ye—o—es,' drawled madam in a reluctant, cold tone. 'Thank you, madam!' said I, with extreme cordiality, and was marching from the room when she recalled me with 'You'd better go on Saturday afternoon then, when the children have holiday, and if you return in time for them to have all their lessons on Monday morning, I don't see that much will be lost.' You are a genuine Turk, thought I; but again I assented, and so

the bargain was struck. Saturday after next, then, is the day appointed. I'll come, God knows, with a thankful and joyful heart, glad of a day's reprieve from labor. If you don't send the gig I'll walk. I am coming to taste the pleasure of liberty; a bit of pleasant congenial talk, and a sight of two or three faces I like. God bless you! I want to see you again. Huzza for Saturday afternoon after next! Good night, my lass!"

Macmillan's Magazine.

(To be continued.)

THE AMERICAN CENTENARY.

BY HORACE WHITE.

THE hundredth anniversary of American independence was celebrated in a becoming manner, but rather in the way of a duty to be performed, or an extensive business transaction, than as a civic festival. The fourth of July will long continue to be a national holiday, but during the past quarter of a century there has been a growing tendency to look upon it as a necessary evil, and to regard the orator of the day in the light of a bore. The racket of gunpowder and the broiling procession with their attendant casualties are a pretty severe strain upon all except juvenile patriotism. Declamation against the evil practices of George III. ceased to find any real echo in America after they ceased to find any defenders in England. What remains is a deep reverence for the soldiers and statesmen of the revolutionary period. This is sufficient to give permanence to the national anniversary, and it is to be hoped it may never grow less.

What sort of political development has been worked out by the United States during the century now past, is a question susceptible of more than one answer. Taken in its broadest sense, however, it would appear to be that whereas certain British colonies, independent of each other, did unite together a hundred years ago for the purpose of resisting unjust measures on the part of the mother country, they have employed the intervening time, down to the year 1865, in getting rid of colonial traditions, prejudices, and encumbrances, and becoming consolidated as a nation. He who sees in the war of the rebellion only a struggle between slavery and freedom, sees but a

part of the issues involved, and ignores the largest chapter of American history. He who sees in it only a strife for dominion on the one side and independence on the other, takes an equally narrow and one-sided view. The struggle between state sovereignty and national sovereignty commenced immediately upon the conclusion of peace with Great Britain, and continued without intermission down to the overthrow of the rebellion, but the only element capable, according to human ken, of bringing it to the arbitrament of arms was African slavery. On the other hand, it is highly improbable that the slaveholding States would have resorted to arms if they had not been educated during three generations to believe that they had a constitutional right to nullify the acts of the general government, or, as the late President Lincoln termed it, "a constitutional right to overturn the constitution."

The recent work of Professor Von Holst, now accessible in English,* throws a strong and steady light upon the conflict of ideas which divided parties, sections, and states from the adoption of the constitution down to a very recent period. Although this conflict has seldom been out of the mouths of statesmen, although it has filled more printed pages and newspaper columns than any other question, it was reserved for a foreign writer to trace the windings of the

* "The Constitutional History of the United States," by Dr. H. Von Holst, Professor at the University of Freiburg. Translated from the German by John J. Lalor and Alfred B. Mason. Vol. I., *State Sovereignty and Slavery*. Chicago: Callaghan & Co. 1876.

stream from its fountain head, through the thickets and quicksands of near a hundred years, to its *débouchement* in the war of the rebellion. The bird's-eye view is best obtained from the distance, and when, as in the present case, the author has made preparations for his survey by long and careful study on the ground itself, we are not surprised to find things brought to view which had been obscured to Americans by their very nearness. A completeness and roundness are also given to the whole which has hitherto been wanting, and which are worthy of the highest praise. A Swiss lawyer gave the first finished exposition of the English constitution, and a French philosopher the most perspicuous treatise on Democracy in America; and now we are indebted to a German professor for the most comprehensive work on the political development of the United States.

The point from which this development is to be traced is the colonial period, in which we find thirteen communities dependent upon Great Britain, and more attached to her than to each other, reluctantly compelled to draw the sword in defence of the dearest rights of freemen. Some sort of union was necessary to make the resistance effectual; and when the colonies came together in consultation very crude notions prevailed as to their legal status. A few men even then perceived the incongruity of a dual sovereignty—that of the State and of the United States—but the great majority, both of leaders and led, assumed as a fact that the declaration of independence, although not the act of any colony by itself, nor yet of all the colonies separately, but the act of all in unison, had had the effect to make them each sovereign; and in this frame of mind they proceeded to construct the loose political harness called the Confederation, a thing of shreds and patches which with difficulty held together during the war, and which, after peace had been declared, became the laughing-stock of foreign governments, the winding-sheet of the public credit, and the execration of George Washington. Although the title of this document was Articles of Confederation and Perpetual Union, the sovereignty of the States was expressly declared, and the powers of the Confedera-

tion were so extremely attenuated that no money could be raised by taxation, direct or indirect, except by assessment upon the States, which they could pay or not as they pleased. The war had left the Confederation heavily in debt. Various devices were resorted to for obtaining the means to meet the maturing obligations of the Government. A multitude of set-offs and excuses were offered by the little sovereignties in place of cash, and, of course, the more honorable among them would not continue to pay if the less honorable continued to shirk. Assessments having failed to accomplish anything, it was proposed to ask the States to allow the general government to collect taxes within their borders. The right to impose internal taxes was peremptorily refused, but after some delay all the States, except New York, granted the right to collect duties on imports. New York went so far as to concede her customs duties to the general government, provided they should be collected by her own officers and her own depreciated State scrip should be receivable for duties. These conditions were, of course, inadmissible, and so it happened that the new member of the family of nations became independent and bankrupt at about the same time. The external pressure of war being removed, all the ante-revolutionary conceptions of government revived, excepting only that of allegiance to Great Britain. Even the degrading spectacle of public insolvency did not avail to bring the States closer together. Colonial rights had blossomed into State rights. Some of the forms of government had been changed, but the ideas remained substantially the same as before. It was not until the varying customs duties of the several States and the hostile commercial legislation of England had prostrated trade and brought private bankruptcy on the heels of public, that the States began to consider the expediency of surrendering some of their reserved powers in order to give greater efficiency to the whole. The convention which framed the Constitution of the United States had its origin in a conference called by the State of Virginia to regulate the trade and navigation of the Potomac River and Chesapeake Bay.

A long and doubtful struggle ensued in

the Convention between colonial prejudice and national necessity. Things reached so desperate a pass that Franklin proposed prayers to Almighty God, for that the wit of man had been exhausted.* Necessity finally triumphed over prejudice in the Convention, but the victory of the national party only led to a fiercer and more protracted contest in the States over the question of ratifying the Constitution. That the Convention did in express terms declare the constitution and the laws and treaties made in pursuance of it to be the supreme law of the land, and did provide for the establishment of courts to have jurisdiction of all cases arising under said constitution, laws, and treaties, can be seen by reference to the instrument itself. But a discussion of the alleged right of a State to nullify an act of Congress would be premature at this place, since that was the question almost continuously in dispute till it was settled in 1861-5 by the wager of battle. It is certain that the right of a State to secede from the Union after once entering it was freely discussed at the time and was decided in the negative. Both New York and Virginia desired to ratify with conditions, reserving the right to withdraw if the conditions were not complied with. They were told plainly that this could not be done—that they must ratify or reject unconditionally. Virginia ratified in this manner at last by 88 votes against 80 in her Convention, and New York by 31 against 29.† Massachusetts took a long time to deliberate, and eventually ratified by 187 votes against 168. The most effective advocates of the Constitution were Hamilton in New York and Madison in Virginia—two States whose ratification was most important, and at the same time most difficult to obtain. We shall soon

see to what contrary conclusions Hamilton and Madison came in their interpretation of the ratified instrument. The whole history of the period goes to confirm the observation of John Quincy Adams, that the constitution was "extorted from the grinding necessity of a reluctant people."

No wonder that an active minority remained full of hostility to the new order of things, whose cries in behalf of what they called their lost liberties filled the public ear for a whole generation. Threats were made to break the Union before the close of the last century, and a political party came into being, almost simultaneously with the constitution, claiming, under and by virtue of the instrument itself, the right to nullify any act of Congress which might be considered to infringe any right of a State. If any such right existed it necessarily included the right of secession as a last resort. This party took the name of Republican, from its attachment to the principles of the French Revolution. It sought to stigmatise its opponents as monarchists, but the title did not adhere. The name Federalist was that by which it was known to contemporaries and is known to history. The leader of the Republican party of that day was Thomas Jefferson, third President of the United States. Mr. Jefferson was the American minister to France at the time the constitution was framed. He wrote a long letter to Mr. Madison, signifying his general approval of the instrument, but foreshadowing the course he subsequently took in his interpretation of it. He said: "I own I am not a friend to a very energetic government; it is always oppressive; it places the governors indeed more at their ease, but at the expense of the people. The late rebellion in Massachusetts (Shay's Rebellion) has given more alarm than I think it should have done. Calculate that one rebellion in thirteen States in the course of eleven years is but one for each State in a century and a half. *No country should be so long without one.*" Somewhat later Mr. Jefferson clothed his notions of an ideal Union in these words: "An impotent general government is the condition precedent of liberty."

Mr. Jefferson was a Radical and a passionate admirer of the French Revo-

* "The hope of ultimate success must have been small indeed, when such a proposition could be made by Franklin, strongly inclined as he was to rationalism, a man who at heart was averse to all religious demonstration, and who, even in the darkest hours of the war, had carried his head very high."—VON HOLST, p. 51.

† A recent work by a French author ("Les États-Unis Contemporains," par Claudio Janinet, Paris, 1876), which brings forward a stock of half-truths really too formidable for criticism, says (p. 31) that Virginia, New York, and Rhode Island, in their ratifications, expressly reserved the right to withdraw!

lution. He believed that liberty and an efficient central government were incompatible with each other. In this belief he differed from his political associate and successor, Madison, who held that too much weakness in the central government would be as dangerous to liberty, through its tendency to license and consequent reaction, as too much strength. We are perhaps not far enough removed even yet from the agitations which they set on foot to form a perfectly unprejudiced judgment of their characters and work, but no one will deny that both contributed largely to their country's cause, and both exhibited at times the qualities of true statesmanship. Madison's, however, was less mixed with personal interest than Jefferson's, and his patriotism was of a purer, or at all events a less partisan, type. He was lacking in the power of will and continuity which distinguished Jefferson, and was led by the latter into errors which completely stultified him afterwards, but which he would most likely have escaped if left to his own cooler judgment. Mr. Jefferson wrote the Declaration of Independence, a document which stamps him as a master of the English tongue, and proves, as Mr. Bancroft observes in the concluding chapter of his History, that "he was able with instinctive perception to read the soul of the nation." He suggested the prohibition of slavery in all the new territories (to take effect after the year 1800), and drafted an ordinance to that effect three years before the famous ordinance of 1787, prohibiting it in the north-west territory, was passed. He was at heart an anti-slavery man, and he sincerely desired the abolition of the institution in his native State, but was always careful to avoid offending the Virginia slaveholders by untimely expressions of his views. He conceived and accomplished the purchase of Louisiana, thus securing the mouth of the Mississippi and an immense territory on the west bank of that river. On the other hand, he was an extreme partisan and extremely ambitious, and he did not scruple to employ the arts of the demagogue to obtain a party advantage. He was in fact a consummate politician, and the best party leader of his time. In the way of backbiting he had few equals. His letter to Washington, accusing Ham-

ilton of the purpose and desire to establish a monarchical government, and his letter to Mazzei, accusing Washington of the same thing in substance, are couched in terms which compel us to think that, at the time they were written, he really believed his own preposterous statements. They serve to show a narrowness or crookedness of vision of which there are many other examples in his career. Washington was convinced that Jefferson had intrigued against him while yet a member of his cabinet, and the intercourse of the two became subsequently of a ceremonious character. "His [Jefferson's] mode of thought was a mixture of about equal parts of dialectical acuteness, and of the fanaticism of superficiality, as shortsighted as it was daring."* Finally, the principles of federal government, of which he became the champion and expounder, were fundamentally wrong, and have been productive of untold mischief. Those principles were embodied in the resolutions passed by the Legislatures of Kentucky and Virginia in the year 1798, which will be examined hereafter.

Opposed to Jefferson's theory of government and of the constitution, in all its parts, was the master-spirit of Washington's first cabinet, Alexander Hamilton, of New York. Born in the West Indies, of mixed Scotch and French Huguenot blood, he combined in the highest degree the perseverance and acumen of the one race with the versatility of the other. Sent to New York to be educated, he entered Columbia College, and was pursuing his studies there, when the differences between the colonies and the mother-country became sufficiently pronounced to engage the earnest thought of all classes. At the age of seventeen he produced a series of essays on the Rights of the Colonies, which attracted general attention. "There are displayed in these papers," says a competent authority, "a power of reasoning and sarcasm, a knowledge of the principles of government and of the English constitution, and a grasp of the merits of the whole controversy, that would have done honor to any man at any age, and in a youth of seventeen are wonderful."†

* Von Holst, p. 160.

† Hist. Constitution of the U. S., by George Ticknor Curtis.

About the same time he gave indications, in a public speech at Boston, of that rare eloquence which in after years enabled him to sway public assemblages and to bring hard-headed and hostile legislative bodies to his way of thinking in spite of themselves. At the age of nineteen he entered the patriot army as Captain of Artillery, and after a short service in this capacity was chosen by General Washington as his confidential aide-de-camp; with him he remained till near the close of the war. When Washington was elected President he called Hamilton again to his councils and tendered him the post of chief importance and chief difficulty, that of Secretary of the Treasury, in which he well earned the felicitous encomium pronounced upon him, a generation later, by Daniel Webster: "He smote the rock of the national resources, and abundant streams of revenue gushed forth; he touched the dead corpse of the public credit, and it sprang upon its feet." To his exertions and to Madison's in about equal measure had the country been indebted for the ratification of the constitution. To his sagacity mainly is it due that the new government was not strangled in its infancy. With untiring industry, unerring foresight, and sleepless vigilance, he frustrated the efforts of the party of disintegration of his day. Against his generalship numbers availed nothing, nor did the ingratitude and insubordination of his own party ever daunt him. He saw clearly the object to be attained, and when his own friends deserted him he made use of his enemies to accomplish his ends, which were always his country's. The more superficial parts of Jefferson were no match for his active and clairvoyant genius. One by one he laid the timbers of a stable, self-sustaining, self-propelling government, and at last he sealed his devotion to his principles with his blood; for not even the death of Lincoln was more signally due to his faithfulness to the Union cause, than that of Hamilton when he exposed his body to the pistol shot of Aaron Burr. Hamilton believed that a nation could be made out of the political débris that the revolutionary war had left. That those jealous and discordant materials did not constitute a nation he was perfectly well aware. He

had the courage and capacity to undertake the task; but he looked too far into the future to be a successful politician. Hence, although he carried his point in settling the character of the new government, he lost the prizes of statesmanship, and Jefferson gained them.

President Washington's cabinet was constructed on the plan of attempting to harmonize parties—a plan of government which, although erroneous in general, was not ill adapted to the circumstances of the time. Both Jefferson and Hamilton had places in it. But Washington's confidence was given in such marked degree to the latter that the former eventually retired in disgust, acknowledging that he had been led by his rival, in one instance at least, to support a measure intended to strengthen the Government, and that he considered it the greatest mistake of his life.

The principal measures proposed by Hamilton, having for their object the creation of an efficient central government, and the perpetuation of the Union, were the funding bill (including in that phrase the bill for the assumption of the State debts), the excise law and the first National Bank charter. Although nothing was more absolutely necessary to the prosperity of the Union than Hamilton's funding bill, or some kindred measure for restoring the public credit; although no argument had been more effective in calling the Philadelphia Convention together than the destruction of that credit, the measure was opposed by the Anti-Federalists on the express ground that it would tend to strengthen the Union, and thereby weaken by comparison the sovereignty of the States. Even Mr. Madison opposed it upon this ground. The bill was defeated upon its first introduction in the House, but Hamilton rallied his forces a second time and carried his point by a piece of "log-rolling." The representatives of Maryland and Virginia desired to have the National Capital located on the banks of the Potomac River. Hamilton persuaded enough of his friends to vote for this change of the seat of Government to carry it through, and in return secured enough votes to pass the funding bill. But he was shocked at the character of the opposition he had encountered, and he recorded his opinion of it by saying:

"It is the first symptom of a spirit which must be killed, or it will kill the constitution of the United States"—a saying which waited three quarters of a century for its entire fulfilment, but which vindicated itself signally in each succeeding decade.

The bill for an excise on distilled spirits was brought forward for the double purpose of obtaining means to meet the requirements of the funding act, and of strengthening the Union by seizing a source of revenue which might otherwise have been appropriated by the States. The State-rights party saw the latter point a moment too late, and although the bill had become a law they began with one accord to oppose its enforcement, and when an insurrection sprang up in Western Pennsylvania to defeat the collection of the tax, they managed to delay, for the space of three years, the employment of force to put it down. This was the earliest act of outright nullification that had been witnessed since the adoption of the constitution. Though not sanctioned by the authority of Pennsylvania or any other State, it enlisted the sympathies and indirect aid of the entire opposition party. When Hamilton at last persuaded Washington to take decisive steps by military force to put down the insurgents, a perfect storm of vilification rained upon him. Fifteen thousand militia were called for and sent into camp under Washington's personal supervision. Hamilton himself marched with them to the scene of the disturbances, apprehensive to the very last that they might throw down their arms and return home. The insurgents were extremely valiant when they had to deal only with tax-collectors, sheriffs, and a dozen or more soldiers stationed at an old wooden fort, but when the army of coercion arrived the champions of the divine right of distillation were nowhere to be found in any organized force. The leaders, conspicuous among whom was Albert Gallatin, were fain to sue for pardon on any terms that would save their necks, and their deluded followers took refuge in their own native obscurity. It was an important victory to Hamilton and his party, for it was the first forcible assertion of the national authority over local insubordination. Even as late as 1861 the example had not lost its potency.

"Did not Washington put down the whisky rebellion in 1794?" exclaimed the Union orators and newspapers when the slaveholders' rebellion commenced. Technically, the two cases were not parallel, but for practical purposes they were sufficiently so.

The events which called forth the famous "Resolutions of '98" were intimately connected with the French Revolution. This great social upheaval was welcomed with almost universal acclaim in America, but as it progressed from wholesome reform to rapine and terror, the zeal of the Federalists cooled toward their republican brothers on the other side of the water. Washington himself was determined that, whatever might be the sympathies of the people, the country should not be embroiled in the struggle during his Presidency. The French authorities were determined that it should be so embroiled, calculating that whenever a breach of neutrality should occur, the prevailing republican sympathy and the memories of the late war would infallibly bring the United States to their side. In this they might have succeeded but for the intolerable insolence of their two ministers, Genet and Adet, both of whom affected to hold relations with "the people" of the United States as distinguished from the Government; Genet going so far as to treat the country as a French colony, fitting out privateers, enlisting troops, and issuing commissions to officers on American soil. There is too much reason to believe that Genet was secretly encouraged in this course by Jefferson, who was then Secretary of State. Although the French Directory were compelled to recall Genet, their subsequent acts showed that they approved his proceedings. Bent upon forcing Washington out of his position of neutrality, they organised a political campaign in the United States through pamphlets, newspapers, handbills, clubs, and inflammatory appeals to the memories of '76. They insulted Washington in every possible way, even insinuating, in a formal address to Minister Monroe, that he (Washington) was aiming to lead the people of the Union "back to their former slavery." If they had confined themselves to words, they might have carried their point so far as to bring the people over to their side, and eventually

the Government also. But their military successes had emboldened them to make an application of force as well as of persuasion, and by seizing and confiscating a number of American vessels, freighted in whole or in part with British goods, in violation of the express provisions of a treaty, they speedily paralysed the influence of their best friends in America. Negotiations on the subject of the seizure of vessels grew exasperating. Minister Pinckney was ordered out of France, and even threatened with imprisonment under the French alien law. When finally Talleyrand attempted to impose a heavy fine upon the United States, and demanded in addition thereto a personal gratuity of twelve hundred thousand livres for the Directory and ministers, as conditions of restoring a good understanding, the nation resolutely began preparations for war.

Washington was again invested with the chief command, John Adams having succeeded him as President, and Hamilton again became his first lieutenant in the field. While the people were in daily expectation of the opening of hostilities, the Republicans being thoroughly cowed, and Jefferson very despondent, a couple of laws were passed by Congress (to continue in operation two and three years respectively) to rid the country of the emissaries of the French Government, and to curb the licentiousness of the French sympathising press, clubs, associations, &c. These are known to history as the alien and sedition laws. They were approved by Washington and Patrick Henry, as well as by President Adams. Hamilton did not doubt their constitutionality, but thought them "highly exceptionable," as tending to tyranny and likely to consolidate and strengthen the opposition to the Government, rather than to intimidate and weaken it. In the light of the present day the alien and sedition laws find no defenders; but it is a fact not generally remembered that the opposition of the Republican party of the last century to these measures was based, not upon the infringement of liberty, but the infringement of State rights embodied in them.*

* Professor Von Holst does not make this point clear. The resolutions of '98 would not be logical if directed merely to the vindication of freedom of speech and of the press.

It was their view, that if any alien or sedition laws were required, they should be passed by the State legislatures, and not by Congress. It is only thus that we can understand the counter-measures proposed by Jefferson — the famous "resolutions of '98." The alien and sedition laws, although not intended to promote party ends, could not fail to produce effects upon parties, since they would actually suppress a portion of the machinery by which the opposition saw fit to conduct their political campaigns. Heretofore the opposition had confined themselves to fitful and uncertain objections to particular measures of the Government, but they had had no rallying point, and no well-defined principles as to home politics. Sympathy with republican France could not be expected to last for ever, nor could it be depended on even now, when subjected to the strains put upon it by Talleyrand, Genet, and Adet. The time had come, in Jefferson's view, to establish a rallying point, and to fix some principles. He believed that the successive invasions of State sovereignty had reached a crisis in the alien and sedition laws, and that now, or never, a determined resistance must be made. Hence the resolutions of '98.

Two sets of resolutions, differing somewhat in phraseology, were passed, the one by the legislature of Virginia, and the other by that of Kentucky. Those of Kentucky were the more pointed and outspoken of the two, but they were alike in substance, and had a common origin. Those of Virginia were drawn up by Madison at Jefferson's request, and were passed by the legislature of that State, December 21, 1798. They declare that the powers of the federal government result from a compact to which the States are parties, to be construed by the plain sense and intention of the constitution, and that in case of a deliberate, palpable, and dangerous exercise of other powers not granted by the said compact, the States which are parties thereto "have the right and are in duty bound to interpose for arresting the progress of the evil, and for maintaining within their respective limits the authorities, rights, and liberties appertaining to them." The Kentucky resolutions recite that the constitution was a compact, to which each State was an integral party;

that the general government was not the sole judge of the powers delegated to itself, but that as in all other cases of compact among parties having no common judge, each party had an equal right to judge for itself, as well of the infraction as of the mode and manner of redress. Also that the several States which formed the constitution, "being sovereign and independent, have the unquestionable right to judge of the infraction, and that a *nullification* by these sovereignties of all unauthorised acts done under color of that instrument is the rightful remedy." Two copies of the Kentucky resolutions in the handwriting of Jefferson, varying slightly in language but not in idea, were found among his papers after his death, and there is abundant historical evidence apart from this, that he was the author of both sets, and that he persuaded Mr. Madison to prepare them for the legislature of Virginia, and Colonel Nicholas to introduce them in that of Kentucky. It appears, therefore, that Mr. Calhoun was no more the author of the doctrine of nullification than Jefferson Davis was. Both drew their inspiration from the so-called republican party of the last century, and appealed to some of the most venerated names in American history for their justification. It should be kept in mind that this doctrine was not an assertion of its right of revolution, but of a constitutional right to resist constituted authority.

The Federalists remained in power twelve years, but they were not really a majority of the people at any time. The universal confidence reposed in Washington, the superior statesmanship of the Federalist leaders, the wealth, education, and social position of their followers, and the extravagant and unprincipled demands of the French Directory, had together outweighed the popular leaning toward France, and the still lively animosity toward Great Britain. But this leaning and this animosity were constant quantities, while the opposing forces were variable. Washington had retired to private life, and his successor, John Adams, had picked a personal quarrel with Hamilton, and a public one with the bulk of his party, by sending a new mission to France before the insults of Talleyrand had been atoned or apologised for. This step on the part of Mr.

Adams has been variously accounted for; but supposing it to have been in the highest degree patriotic, it is certain that it was taken without consulting any member of his cabinet or any person entitled to be called a leader of the party. Consequently, the merits of the step in a diplomatic and international point of view, however great they may have been, were, in a party point of view, completely frustrated by the manner of taking it. Many Federalists believed that Adams had gone over to the Republicans. The Republicans themselves, who were still greatly dispirited, notwithstanding some local gains they had made in the South through the unpopularity of the alien and sedition laws, plucked up courage wonderfully, claiming that they had been right all the time in their policy of kissing the hand that smote them. The result was, that Mr. Adams failed of a re-election. Jefferson and Burr (Republicans) received a tie vote in the electoral college, and the election was thrown into the House of Representatives, where neither of them could get a clear majority without the help of the Federalists.

The mass of the Republican voters intended that Jefferson should be President and Burr Vice-President; but under the provisions of the constitution at that time each Presidential elector voted for two persons, the one receiving the highest number of votes to be President, and the one receiving the next highest to be Vice-President. In case of a tie, the House of representatives was required to choose the President, each State having one vote, and a majority of the States being requisite to a choice. In order to worry the Republicans and to spite Jefferson, a portion of the Federalists conceived the idea of electing Burr President. There were now sixteen States in the Union, of which Jefferson and Burr could count on six each, leaving four in the control of the Federalists. When Hamilton, who had meanwhile retired to private life, learned of the intrigue between Burr and the Federalists, he threw his whole influence in favour of Jefferson. He told his friends that if there was any man in the world whom he ought to hate that man was Jefferson, but that Burr was at heart a Catiline, bent upon ruling the country

by uniting the scoundrels of all parties, and that "upon every virtuous and prudent calculation Jefferson was to be preferred." In Burr he saw the enemy of his country, and in Jefferson only his own enemy. Exactly how far his counsels were instrumental in bringing about the defeat of Burr is not known, but considering his recognised position as the most trusted leader of his party, and considering also the very narrow escape which Jefferson had, we must conclude that they were very important if not decisive.* While the balloting was going on in the House some of the Federalists proposed to make the dead-lock permanent, as they had the power to do, and choose a presiding officer of the Senate, vesting the executive power in him by statute until a President should be lawfully chosen. Even Mr. Adams thought this was feasible, and that the people would be as well satisfied with it as with the election of either Burr or Jefferson. But Jefferson took care to notify them that on the day such a statute should be passed, the middle States would arm and overthrow a government so constituted. In point of fact steps were taken to make good this threat. The building of an armory at Richmond, which had been commenced during the alien-and-sedition-law excitement, was recommenced, and a plan set on foot to seize the Government arsenal at Harper's Ferry. The Federalists were scared out of their project, which was clearly unconstitutional and revolutionary.

Although the Federalists had gone out of power never to return, their policy had been impressed on the new Government so firmly that their successful opponents made no attempt to undo their work. While laboring to defeat Burr, Hamilton predicted that Jefferson, once in power, would not disturb the measures which had been adopted to strengthen the

Government. In point of fact, he was soon compelled to use stronger measures than the Federalists had ever employed. The Federalists, on the other hand, began to construe the constitution with the aid of Jefferson's dictionary. The proposed purchase of Louisiana alarmed the New England States. They apprehended that the addition of this extensive dominion would give the South a perpetual preponderance in the Union and control of the Government. There was no clause in the constitution expressly conferring upon Congress the power to acquire foreign territory. They became great sticklers for "strict construction." Some of them claimed that a constitutional amendment was necessary; while others, reverting to the resolutions of '98, declared that since the constitution was a compact, in the nature of a partnership, it was impossible to take in new partners without the consent of *all* the old ones, and that the taking in of a new one without such consent would release the old ones. The Republicans contended that the power to acquire territory was one of the necessary attributes of sovereignty, inherent in every government, whatever its name or character. Jefferson himself could not abandon all the theories he had been elaborating these twelve years for the confusion of his enemies and the admiration of posterity. Nor could he let the opportunity to acquire Louisiana slip by. So he acknowledged that the step he had determined to take was unconstitutional, and proceeded forthwith to take it. The acquisition of Louisiana served to strengthen the Government, not only by the possession of the mouth of the Mississippi, but by committing to the doctrine of "constructive powers" the only party that had up to this time denied it.

The Federalists, however, soon found new occasions to change ground with their adversaries. The British orders in council, and the Berlin and Milan decrees of Napoleon, fell with great severity on American commerce. Jefferson was opposed on the score of principle to a war with France, and on the score of interest to a war with England. As a measure of retaliation he recommended an embargo on American commerce. In this he was at first sustained by the country with singular unanimity, even

* If we may credit the statement of Burr's biographer (Parton), Jefferson's subsequent behavior presented a very sorry contrast to this example of magnanimity on the part of his rival. When, according to this authority, Hamilton's assassin arrived in Washington City after the fatal encounter, Jefferson received him with marks of attention, and gave him at least one and probably two appointments to important offices for his (Burr's) friends—the secretaryship and governorship of Louisiana Territory.

John Quincy Adams voting for the measure. But the weight of the blow fell upon New England with tenfold greater severity than upon Old England. Indeed it was scarcely noticed in the latter country, while in the former it inflicted greater injury than the orders in council and the decrees of Napoleon combined. Opposition to the embargo became very decided. It worked its way into New York, New Jersey, Pennsylvania, Delaware, and Maryland. But Jefferson and his party were so convinced that the deprivation of American products would eventually bring England to terms, that they adhered to it with the utmost tenacity. The war of words was at its height when John Quincy Adams whispered to Jefferson that a combination had been formed in the North having for its object a disruption of the Union, and Jefferson was so much alarmed by it that he recommended a repeal of the embargo and a war with England in its stead. How far Mr. Adams was justified in saying that the Union was in danger in consequence of the embargo is still a matter of dispute. When his statement to Jefferson leaked out, some fifteen years later, Mr. Adams was called upon by thirteen eminent citizens of Massachusetts to give a full and precise account of the facts and evidence constituting the foundation of so injurious a charge. In replying to this request, Mr. Adams went back to the acquisition of Louisiana in 1803, five years earlier than the embargo, and said that a plan had been formed then, by certain Federalist leaders, to dissolve the Union, and that it had gone so far as to fix upon a military commander to carry it into execution; that his knowledge of it alienated him from the secret councils of the party; that the conspiracy of 1808 which he communicated to Mr. Jefferson was a continuance and revival of the proposed revolt against the Louisiana purchase, for which the public exasperation against the embargo seemed to furnish a new opportunity; and finally that a sense of solemn duty might at some future day require him to disclose the evidence in his possession for these grave allegations, but that the selection of the day for such disclosure, whether in his own lifetime or later, must remain in his own judgment. Nearly thirty years have elapsed

since Mr. Adams's death, but the disclosure has not yet been made. The absence of any motive for misrepresentation, no less than his elevated character and his ample sources of information, must convince us that there was some substantial ground for his statements. Moreover, Mr. Hamilton was so keenly alive to the dangers of the plot in 1803 and 1804 that, in his efforts to frustrate it, he became involved in the controversy with Burr, which ended in the fatal duel between them.

Jefferson's proposed war with England was voted down by a decisive majority in Congress. Madison succeeded him as President, and sought to secure the exemption of American shipping from the harsh and unjustifiable measures of the belligerents in Europe by negotiation. Three years of indefatigable letter writing, mingled with threats of war in the American Congress and entreaties for peace among British manufacturers, resulted in the revocation of both the Berlin and Milan decrees and the orders in council. But war with England had been declared two months before the news of the revocation was received. Hostilities had not actually commenced, and a hope was entertained among the commercial classes of the North that the repeal of the obnoxious orders would avert bloodshed. But a war party had grown up in Congress under the spur of continued provocations, led by Clay and Calhoun, fired with the idea of conquering and annexing Canada, and reaping glory and political capital from that undertaking. The so-called right of search and the impressment of seamen on board American vessels, claimed and exercised by Great Britain, were indeed a sore grievance, sufficient to have justified a war without any other causes of difference, but as this was not the cause of the war-preparations in the first place, and as it was not clear that it might not have been removed by negotiation, and as it was wholly ignored in the subsequent treaty of Ghent, we are constrained to believe that the real reason for rejecting the tardy and ungracious concessions offered by Lord Castlereagh was something else. Whatever may have been the motives of the Junta that overcame Mr. Madison's strong aversion to war, the two countries soon came to blows. As

the war was without definite aim on either side, so was it without definite result. The New England States, which were the principal sufferers from it, tacitly resolved to contribute nothing to it beyond what the letter of the law demanded. The anti-war party soon acquired a majority in the legislatures of New York and New Jersey, and at times carried the elections in Delaware and Maryland. The war-party became greatly exasperated at their want of success in the field, which they attributed, with considerable justice, to a lack of energy on the part of those who believed that the conflict was unnecessary, and therefore wrong. A new and more stringent embargo was enacted, as much for the purpose of punishing the New England States as of annoying the enemy, whereupon the Massachusetts legislature, taking the ideas and borrowing, in part, the language of the resolutions of '98, used these memorable words: "We spurn the idea that the free, sovereign, and independent State of Massachusetts is reduced to a mere municipal corporation, without power to protect its people and defend them from oppression from whatever quarter it comes. When the national compact is violated and the citizens of the State are oppressed by cruel and unauthorized law, this legislature is *bound to interpose* its power and wrest from the oppressor his victim."

Here was the doctrine of State sovereignty in full measure. It was followed by the refusal of Massachusetts, and of Connecticut also, to allow Federal officers to take command of their militia, and by the call for the Hartford Convention. This convention was stigmatised as a hotbed of treason by the party in power, and is not considered at the present time a desirable place to trace one's political lineage back to. But it never went beyond the fundamental principles of Democratic - Republican faith, as written by Jefferson and Madison themselves. Both parties had, for the time being, changed coats—the Federalists asserting State sovereignty, and their opponents national sovereignty. Three of the New England States were represented in the Hartford Convention by regular delegates, and the other two by irregular ones. But it led to no result except to bring its participants under a

load of obloquy—negotiations for peace having been instituted before it concluded its sittings. It recommended to the States represented the adoption of measures to protect their citizens against forcible drafts, conscriptions, or impressments not authorized by the constitution—an ominous proceeding if the States were to judge for themselves of the constitutionality of such drafts and conscriptions. Its other recommendations were technically unobjectionable, although the spirit governing the whole was a defensive league between the New England States. These recommendations were formally accepted by Massachusetts and Connecticut, and that was as far as the project ever got. The conclusion of peace rendered it nugatory, and perhaps saved Mr. Madison a task he was by no means equal to—that of combating a rebellion founded upon the resolutions of '98.

From this time forward there has never been in the North any important assertion of the right of a State to nullify an act of Congress. Some decisions were made in Northern State courts overruling the fugitive slave law, on the ground that it was an infringement of State jurisdiction, but when these decisions were overruled by the United States Supreme Court, the judgments of the latter tribunal were always acquiesced in. Two petitions from the North asking for a peaceable dissolution of the Union, presented in Congress by John Quincy Adams and Joshua R. Giddings, in the year 1842, but disavowed by those gentlemen, caused great commotion in the House of Representatives; but even the small consequence that could justly be attached to them, was not derived from the doctrine of State sovereignty or from the principles embodied in the resolutions of '98. These principles henceforward found their home exclusively in the South, where they had been first formulated, and where they dovetailed with slavery in so firm a bond that the one could not be destroyed without shattering the other also.

The agitation in the South against the Protective Tariff of 1828 was intimately connected with the slavery question. The North was gaining rapidly in wealth, population, and political importance, notwithstanding the

Louisiana purchase, which had so greatly alarmed the New England Federalists thirty years before. The South was lagging behind her unfettered rival, and becoming more and more jealous and discontented every year. Blinded by her "peculiar institution," she refused to see in it any cause for her backwardness in material prosperity, and sought to find reasons for it in the legislation of the country. The tariff had been growing more and more protective for several years, fulfilling the prediction of those who had declared in the beginning that, no amount of protection would be satisfactory to the protected classes more than a few years, and that a stiffer line would be called for soon. The tariff of 1828 was the stiffest that had ever been called for. The hostility of the planting States to this measure, however, was not merely opposition to a bad fiscal policy, but was an outburst of anger at the badge of inferiority which the census-taker was putting on them every ten years, which they ascribed, honestly perhaps, to the tariff. Shortly after the inauguration of President Jackson, the opposition to the tariff in South Carolina took a very decided attitude. In the summer of 1832, Mr. Calhoun, one of the Senators of that State, published an address "On the Relations of the States and Federal Government." He commenced by saying that the question of those relations was not one of recent origin, but that, from the commencement of the government, it had divided public sentiment. He then proceeded to plant himself on the Virginia resolutions of 1798, saying that "the right of *interposition* thus solemnly asserted by the State of Virginia, be it called as it may—State right, veto, nullification, or by any other name—I conceive to be the fundamental principle of our system, resting upon facts historically as certain as our revolution itself, and deductions as simple and as demonstrative as that of any political or moral truth whatever." On the 24th of November following, the Convention of South Carolina passed an ordinance declaring the tariff law null and void, and making it unlawful for the officers of the general government to collect any duties in that State. If force should be employed to collect such duties, South Carolina would consider

herself absolved from all allegiance to the Union, and would proceed at once to organise a separate government.

President Jackson replied by sending a message to Congress, affirming that the Constitution of the United States was a *government* and not a *compact*, that the language of the instrument itself declaring that it, and the laws, and treaties made in pursuance of it, should be the *supreme law of the land*, and that all State courts should be bound by it, anything in the constitution or laws of any State to the contrary notwithstanding, excluded the idea that a State could declare and treat such supreme law as a nullity. His argument, a very able one, was pointedly opposed to the resolutions of '98. The Democratic party of the present day claims descent in the direct line from Jefferson and Jackson, and the claim is in one sense true, but not at all valuable; for if ever there were two men holding opinions more diametrically opposed to each other as to the vital principles of the constitution and government of their country, history has not mentioned them. Nevertheless, Jackson was not anxious to press the controversy with South Carolina to a bloody issue. He recommended the passage of a new law to enforce the collection of duties in South Carolina, but at the same time he recommended a reduction of the duties. If the duties had not been reduced it is probable that he would have brought the State into obedience by military force, because he was a soldier, and he believed in the employment of force. Mr. Clay even accused him of a desire to gratify his passions by spilling the blood of his enemies in South Carolina; but there is the best evidence that he wished to avoid that necessity. Mr. Clay, himself the champion of the tariff, was the first to back down. He had been eager for a war with England when there was no substantial cause for it, and now he was equally anxious to avoid a war for which there was abundant cause. Through his influence the tariff of 1828 was reduced one-half, the reductions extending over a series of years by a sliding scale—a measure the wisdom of which would be conceded if it had not been extorted under a threat. The South Carolina Convention was re-assembled, and the nullifying ordinance

repealed on the express ground that the tariff had been modified to meet the views of the nullifiers. The doctrine of State sovereignty, nullification, or secession—all names for the same thing—received enormous impetus and strength from the temporary triumph achieved for it in 1832, and the slave power incorporated it still more strongly into their political creed, and enlarged it year by year, till it came to include the right to carry slaves into free territory, and hold them there against the will of the majority.

It would be impossible within the limits of this article to touch upon all the manifestations of the struggle between the opposing ideas of State and national sovereignty prior to the death-grapple between them, which commenced in 1861, and ended in 1865 in the complete demolition of the doctrines laid down in the resolutions of '98. Strongly convinced as the writer is that the language of the constitution, as originally framed and ratified, lodged the sovereign power in the national government exclusively, it is apparent that nothing short of superior force could ever have settled the dispute after it became complicated with the pecuniary interests and bitter passions of slavery. It is likewise apparent that until the question was decided the United States could not logically be counted a nation. While one-half, or nearly one-half, of the people maintained and believed that the general government was a mere agency, or power of attorney, revocable at pleasure, and while they had power to give effect to such views, the nationality existed only in the vain imaginings of those who held the contrary opinion. The birth of the nation, therefore, does not really date from the 4th of July, 1776, but from the day whereon the theories of Thomas Jefferson were crushed by force and arms. Mr. Jefferson's desire for a rebellion oftener than once in a century and a half has been gratified beyond his most sanguine expectations. Considering the state of the world at the time he played his part in it, we need not blame him for the views he held, but in awarding the palm of statesmanship, which is the gift of seeing in advance how institutions will operate upon society, we must pass him by and place it on the brow of his great rival.

Although it may now be said that a dual sovereignty has been proven by the strongest of all arguments to be a self-contradiction and an impossibility, Professor Von Holst observes that the idea still clings after the thing itself has vanished. This is true, for "he who's convinced against his will, is of the same opinion still." How extensively the old idea prevails in men's bosoms cannot be ascertained, but something may be inferred from the action of the political party that formerly supported and maintained it. The Federalist party had been ground to powder, and ceased to exist, during the administration of James Monroe, whose second election to the Presidency was accomplished without opposition. For want of opposition, the Democratic-Republican party broke into four fragments in the election of 1824 without any essential difference of principles; and no candidate receiving a majority of the electoral votes, John Quincy Adams was chosen President by the House of Representatives. A few years later, the fragments crystallised into the Democratic party under the leadership of General Jackson; and the national Republican party under that of Adams and Clay. The latter organisation was soon afterwards merged, with sundry desertions from the Jackson ranks, in the American Whig party, which survived till 1856, when it succumbed to the exigencies of the slavery question, and gave way to the existing Republican party. In 1852, the Democratic party for the first time took cognizance of the slavery question in its national platform, and in close juxtaposition declared the principles laid down in the Kentucky and Virginia resolutions of 1798 and Mr. Madison's report thereon to be one of the main foundations of its political creed. This declaration was repeated in the party platform of 1856. In 1860 the Democratic party divided in sunder, and both fragments reaffirmed the platform of 1856. In 1864, the war being in progress, the resolutions of '98 were prudently omitted. In 1868 the party declared that the right of regulating the suffrage belonged to the several States, and that any attempt by Congress to interfere with it would, if sanctioned by the people, "end in a single, centralised, consolidated government, in which the separate existence

of the States will be entirely absorbed, and an unqualified despotism be established in place of a federal union of co-equal States." Two years later the suffrage was regulated in all the States by an amendment of the Constitution. The Democratic party, in its platform of the present year, declares its "devotion to the constitution of the United States, *with its amendments*, universally accepted as a final settlement of the controversy that engendered the civil war." The old idea, however, timidly shows its head in another paragraph, where it is declared that reform is necessary to save the Union from the dangers of a "corrupt centralism," the voter being left to infer vaguely whether the dangers are due most to corruption or to centralism. This is the attenuated skeleton of the resolutions of '98. Nevertheless a large body of opinion remains, under the influence of party bias or early training, favorable to the idea of State sovereignty co-existing with national sovereignty, and this is not confined wholly to the Democratic party. A certain vagueness even pervades the Republican party, from whose midst we not infrequently hear that the States are sovereign "within their sphere"—the sphere being as undefined as the spheres assigned for our future abode in the text-books of modern spiritualism. The full extent of the defeat suffered by the State rights party in the late war is only half understood by either victors or vanquished. The official seal of the State of Illinois is still inscribed with the motto "State sovereignty, national Union"—a phrase whose suggestions convey no idea of national sovereignty whatever. Yet the State of Illinois has been under the control of the Republican party during sixteen years. Most of the State constitutions

contain clauses providing for the punishment of treason against the State. These provisions are incongruous with existing facts, for it is quite conceivable that a citizen might be hanged for treason against a State, and his judges and executioners hanged for treason against the United States. All the apparatus for such a solecism was in readiness in South Carolina in the year 1832.

Notwithstanding the more or less confusion in the public mind on the subject of State *versus* national sovereignty, State sovereignty now goes to the wall in every practical conflict. Nor will its entire disappearance be followed by the "unqualified despotism" apprehended by Jefferson, and presaged by the Democratic party as late as 1868. An unqualified despotism enacted by a free people upon themselves can only be the result of general corruption and stupefaction of the public morals—a condition in no wise dependent upon the concentration or dispersion of sovereignty. The only form of centralization to be feared is that which grows out of the existing method of making appointments to Federal offices—a method which, when first introduced, Mr. Clay said would, if persisted in, "finally end in a despotism as intolerable as that of Constantinople," and which even General Jackson, before his election to the Presidency, allowed would tend inevitably to corruption.* Centralization coming in this form would be equally effective whether the theories of State sovereignty or of national sovereignty should prevail. The immediate need of the American people and Government is a restoration of the permanent civil service which prevailed during the first forty years after the adoption of the constitution.—*Fortnightly Review*.

WHEN THE SEA WAS YOUNG.

IN TWO PARTS.

PART II.

WHEN our earth's deep atmosphere bore the waters of her present seas floating aloft in the form of vast cloud-masses peculiarity of appearance must occasionally, though perhaps only as a rare phenomenon, have been observable. Sup-

pose that while a telescopist on Venus above her fiery surface, a remarkable

* The unwarranted interference by the Federal judiciary and army in the last Louisiana election was a direct consequence and outgrowth of the "spoils system" of civil service.

or Mercury was contemplating the earth, one of those rapid changes described in the preceding part affected cloud-layers forming the earth's visible outline at the moment of observation. The earth's apparent figure would then not only be distorted by the change, but the actual progress of the change would take place under the observer's eye. Most probably no change of the kind could have been detected by direct observation, many circumstances with which telescopists are familiar rendering an observation of the kind peculiarly difficult. But supposing the observer to have watched the earth when the moon was about to pass in transit across her face, and that the moon appeared at the moment close to that part of the earth's outline where such changes were taking place; then it would be possible, on account of this favorable conjuncture, to recognise the change of outline. For instance, if the apparent outline chanced to be raised above its usual position when the moon was very close, the two outlines—that of the moon and that of the earth—would seem to be in contact before they really were; but if, just at that time, the high cloud-layer which formed the raised part of the earth's outline were rapidly to disappear, then her outline would shrink in that place, and no longer appear to touch the moon's. Or again, it might happen that an observer of the moon, watching the great globe of the earth as it moved over the star-strewn heavens, would see its outline pass over and conceal some conspicuous star, but in a few minutes perceive the star reappearing outside the same part of the earth's outline. The observer would then know that the outline must have shrunk. In these and like ways observers outside the earth might in those remote times have seen the evidence of very active processes of change taking place in her deep cloud-laden atmosphere.

Now appearances such as these cannot be expected to occur frequently in the case of Jupiter or Saturn. The changes themselves which could alone produce them are infrequent, and the conditions under which the changes could alone be detected occur but seldom; so that the chance of a change occurring just where and when it could be detected are very small indeed. Yet in one case certainly

astronomers have detected just such a change in the outline of Jupiter. It would be difficult—nay, we venture very confidently to say that *it is impossible*—otherwise to explain what is described by the late Admiral Smyth, one of the most careful and skilful of modern astronomers: "On Thursday, June 26, 1828," he says, "the moon being nearly full and the evening extremely fine, I was watching the second satellite of Jupiter as it gradually approached to transit its [the planet's] disc. My instrument was an excellent refractor, of 3½ inches aperture, and 5 feet focal length, with a power of 100. It appeared in contact at about half-past ten, by inference, and for some minutes remained on the edge of the limb" (that is, on the outline of the disc), "presenting an appearance not unlike that of the lunar mountains coming into view during the first quarter of the moon, until it finally disappeared on the body of the planet. At least twelve or thirteen minutes must have elapsed, when, accidentally turning to Jupiter again, to my astonishment I perceived the same satellite *outside the disc*. It was in the same position," as to level, "where it remained distinctly visible for at least four minutes, and then suddenly vanished."

This narrative is so surprising, even when explained in the simple manner which our theory of Jupiter's condition suggests, and still more so on the usual theory of Jupiter's condition, that it may be well to pause for a moment to inquire whether there may not have been some mistake. Admiral Smyth was a skilful observer, as we have already stated. His statement alone would have great weight. Still one may admit the bare possibility of an optical illusion, similar to what is described in Brewster's *Natural Magic*, the satellite seen after the immersion being a mere trick of the mind, a "blot on the brain which would show itself without." Smyth himself supposed so, for he says: "As I had observed the phenomena of Jupiter and his satellites for many years, without any remarkable irregularities, I could not but imagine that some optical or other error prevailed, especially as the satellite was on this" (*i.e.* the hither) "side of the planet." And probably the phenomenon thus dismissed by Smyth himself would not have been

heard of, but for the fact that two other observers chanced to witness it. "A few days afterwards," proceeds Admiral Smyth, "I received a letter from Mr. Maclear, Biggleswade, informing me that he had also observed the same, but that he had considered it a 'Kitchener's wonder'" (old Kitchener, the telescopist, having been apt to recount every optical illusion by which he was perplexed as a real phenomenon). "And about the same time," adds Smyth, "Dr. Pearson, having favored me with a visit, asked me whether I had noticed anything remarkable on the 26th; for that he had, in accidentally looking at Jupiter, *seen the second satellite reappear!* Here, then were three observers, at distant stations, with telescopes of different apertures, all positive as to the extraordinary deviation from rule. It may be borne in view that Biggleswade is twelve miles from Bedford" (the place of Smyth's observatory; and South Kilworth, Dr. Pearson's residence, is thirty-five). Mr. Maclear's telescope was rather smaller than Admiral Smyth's; while Dr. Pearson's was a much more powerful instrument, twelve feet long, and nearly seven inches in aperture. "Explanation," calmly remarks Mr. Webb, in speaking of this phenomenon, "is here set at defiance; demonstrably neither in the atmosphere of the earth nor Jupiter; where and what could have been the cause? At present we can get no answer." But it is not the part of the true student of science thus to resign the attempt to explain a phenomenon merely because it is unusually perplexing. In this case we can reason directly from the observed fact to its interpretation, apart from those *à priori* considerations which in the present essay have led us to regard such a phenomenon as one to be looked for in Jupiter's case. First, the observation was certainly not an optical illusion, for three persons made it independently; secondly, it was demonstrably not due to terrestrial atmospheric causes, for it was seen from three stations far apart; thirdly, it was demonstrably not caused by any action of Jupiter's atmosphere on light proceeding from the satellite, for the satellite was between Jupiter and the observer; fourthly, the satellite cannot really have stopped, gone back on its path, and then resumed its onward

course, unless the laws of nature were suspended—a theory we may dismiss in a scientific inquiry; for a similar reason, fifthly, we may dismiss the idea that the whole mass of Jupiter moved in abnormal fashion. There remains only one possible interpretation—viz. that the outline of Jupiter's disc had changed in position; in fact, in whatever way we explain *how* this happened, the observations may be regarded as proving unmistakably that it *did* happen.

Now the supposition that Jupiter's outline altered leaves us still much to wonder at. For let us consider the extent of change necessary to account for what was observed. Smyth may have been mistaken as to the time intervals he mentions in his account, since he does not seem to have taken them from the clock. The interval, which he supposed to have lasted twelve or thirteen minutes, may in reality not have lasted more than five or six; and the time during which, after reappearing, the satellite continued visible, may not have lasted more than two minutes instead of four, as roughly estimated. But, taking only eight minutes as the total interval between the first and second disappearance, we have to account for marvellous changes in the apparent position of the planet's outline. For in eight minutes the second satellite would travel about 4,000 miles, and the outline of Jupiter must have changed by that amount, seeing that at the first disappearance the visual line to the satellite just touched the planet's apparent edge, while at the second disappearance the visual line to the second position of the satellite, 4,000 miles from the first, touched the planet's edge in its now changed position. Probably the difference was even greater; Smyth's own estimate of the time would make it at least 8,000 miles: but 4,000 miles will be enough to deal with. It is not necessary to suppose that the planet's apparent outline, *as ordinarily seen*, shrank inwards by the whole of this amount. More probably the outline bulged beyond its normal position at the time of the first disappearance, and presently shrank below its normal position, bringing the satellite again into view, and remaining thus depressed until the second disappearance had taken place. We may suppose, then, that at the beginning

the surface forming the apparent outline was (at the place where the satellite's transit began) about 2,000 miles above the usual mean level, while afterwards it was much below that level. Two thousand miles being less than the fortieth part of the diameter of Jupiter, we can readily understand why even so enormous an apparent expansion or contraction should not have noticeably affected the symmetry of the planet's apparent figure. Indeed, with ordinary telescopic power the outline of Jupiter is so expanded by irradiation, that much greater changes of level would be so far masked as to escape attention. But we are not greatly concerned to reason at this stage as though the theory that the planet's outline changed required to be defended against objections. For it is absolutely certain that the outline must have changed. The visual line to the satellite certainly passed several thousand miles nearer the planet's centre at the time of the first disappearance than at that of the second, yet in both cases touched the apparent outline, which must therefore have shifted by as many thousands of miles, unless the satellite itself had stopped and retreated, or the whole bulk of the planet had shifted; neither of which events could occur except by a miracle. Now the changing of the outline, though marvelous, is not miraculous, and, being demonstrably the only non-miraculous interpretation of the observed event, must be accepted as the true interpretation—the event itself, observed as it was by three skilled astronomers, having certainly occurred.

This being so, the outline of Jupiter having certainly changed for awhile on that particular occasion, which theory, we would ask, should be rejected as fanciful and sensational—the ordinary theory, according to which the solid crust of Jupiter must, after rising 2,000 miles at least, have sunk through 4,000 miles? or the theory that a cloud-layer, floating at least 2,000 miles above the usual level of the highest visible cloud-layer of Jupiter, melted quickly into the form of invisible vapor, and thus a layer lower than usual by as many thousand miles came into view, forming for the time the planet's apparent outline in that place? According to the first theory, a surface much larger than the whole sur-

face of our earth sank through a depth greater than the whole distance from the earth's surface to her centre. The intense heat which is regarded with such disfavor by followers of the old-fashioned ideas (really based on the Ptolemaic astronomy), if it had had no existence before, would have been generated by so tremendous a downfall, which indeed could not have taken place without vulcanian heat, exceeding in intensity what the other theory presents as the natural consequence of Jupiter's mode of formation. According to this second theory, the rising of the cloud-layer even to so great an elevation as 2,000 miles above the usual level of the highest Jovian clouds, was an exceptional phenomenon indeed, but by no means incredible; while the rapid dissipation of the cloud was not only quite easily to be explained, but corresponded with changes which have been observed to take place among cloud-layers seen on the disc itself. If a vast cloud-layer can disappear in a few minutes from view, above one part of the planet's surface, so also it can above another. One part may chance to lie on the visible disc of the planet; another may chance to lie on the edge of the disc; for these parts of the disc only bear relation to our point of view, not to the planet itself; and while a change occurring in one part would make a belt or spot seem to form or disappear, one occurring in the other position would make the apparent outline of the planet seem to bulge or shrink, as the case might be. Nay, we may add one consideration which would render the dissipation of a high cloud-layer in the position where Jupiter's outline appeared swollen, even more naturally to be accounted for than the often observed dissipation of a cloud-layer on the disc itself. For the cloud-layer which vanished on that occasion had just been carried into sunlight by the planet's rotation; and we can readily understand how the solar heat, slight though its effects may be compared with those of Jupiter's own internal heat, might bring about the dissolution of a cloud-layer which chanced to be in that critical stage where a slight cause will bring about either rapid formation or rapid dissipation of visible cloud.

The chief difficulty, of course, in the

theory, or rather the most surprising result of the demonstrated fact that Jupiter's visible cloud-layer thus changed, resides in the enormous depth we have to assign to the cloud-supporting atmosphere. We have already shown in these pages* that, *ceteris paribus*, the atmosphere of Jupiter would be much shallower—layer for layer—than our earth's, simply because the planet's mighty attractive power would more strongly compress it. That it is manifestly not thus compressed indicates, as we then showed, the intensity of the heat pervading its whole extent. But that it should range to a height of thousands of miles above the true surface of the planet, does certainly seem at first amazing. *Yet be it remembered that not only is such an inference demonstrably correct, as we have just shown, but it also follows necessarily from the comparison already instituted between Jupiter and the earth in respect of mass and density. If we assign to the solid globe of Jupiter the same mean density as the earth has—or, rather, if we imagine the totality of material, whence millions of years hence his solid globe is to be formed, gathered into a globe having the same mean density as the earth—we find for this globe a diameter of 53,000 miles, less than his present apparent diameter by nearly 32,000 miles; so that the level of his surface in that condition would lie 16,000 miles below his present surface, the space between the two surfaces, or the total shrinkage of Jupiter's volume, amounting to about 930 times the volume of this earth on which we live. As we have every reason to believe that (in a general sense) all the planets are constructed of the same materials not very differently proportioned, we are compelled to admit this vast expansion of Jupiter's present dimensions, and can therefore very well understand even such mighty changes of apparent surface-level as the observation of Admiral Smyth, Sir T. Maclear, and Dr. Peacock certainly shows to have taken place.

But now, reverting to our earth's history during the period corresponding to that through which Jupiter is now passing, let us consider whether the ocean, converted by heat into great cloud-

masses floating through hundreds, if not thousands, of miles above the glowing surface-crust, would not produce yet other appearances such as distant observers might have been able to note.

When the shadow of the moon falls now upon the earth during a solar eclipse, it may either wholly or in part reach the actual surface of the earth, or be intercepted partly or wholly by cloud-layers. If an observer on Venus or on Mercury were to watch the earth when undergoing eclipse in this way, the apparent shape of the shadow would not be in any appreciable degree modified by such variations in the manner of the shadow's fall, unless very powerful telescopes were employed. For the cloud-layers of our air lie but a few miles above the surface of the earth,* and the apparent displacement of a part of the moon's shadow, intercepted by a cloud-layer, would be correspondingly small, and in fact undiscernible from Venus or Mercury. But if the atmosphere were very deep, and the cloud-layers separated from each other and from the earth by hundreds of miles, the case would be different. To illustrate the nature of the appearances which might be expected, let us consider the case of a balloon suspended in full sunlight above a layer of fleecy clouds, the layer intercepting a portion of the sun's light, but not all of it. If the layer intercepted all the sun's light, then, of course, a shadow of the balloon would be thrown upon the cloud-layer, this shadow appearing as one, whether seen from the balloon itself, or from the higher parts (let us say) of a lofty mountain reaching far above the layer of clouds. But, the layer not intercepting all the light, a portion of the rays pass on to illuminate the ground everywhere except where the balloon has intercepted the sun's rays. That is to say, there is another shadow on the ground upon the prolongation of lines drawn from the balloon to the shadow on the clouds.

* Much less is known than might be respecting the height of the loftier cloud-layers. Coxwell and Glaisher, in their highest aerial flights, saw the cirrus clouds apparently as high above them as when seen from the ground. The height of such clouds could be quite easily determined by taking photographs, with suitably adjusted instruments, from either end of a measured base-line a mile or two in length.

* Cornhill Magazine, for May, 1872.

These two shadows seen from the balloon itself would appear as one, both lying in the same direction; but they would be separately discernible from a station on the mountain height. Neither would appear quite black; for the higher would lie on clouds through which the observer would receive light from the illuminated ground below, which he would partially see, while the lower shadow would be seen through the illuminated cloud-layer whose light would partially conceal the blackness of the shadow. If the cloud-layer were *very* thin, the upper shadow would be the least distinct; if the clouds without being dense yet suffered but a small quantity of direct sunlight to pass between and through their fleecy texture, the upper shadow would be very dark, the lower scarcely visible. Now replace the balloon by the moon, and the observer upon the mountain height by a distant astronomer on Venus or Mercury, and we perceive that at times, when (in the distant period we are considering) the shadow of the moon fell on a very lofty layer of fleecy clouds, while the shadow so falling would be plainly visible, another fainter one would be discernible on a lower cloud-layer, whose existence and relative position would in this way be indicated to the thoughtful observer. Or, if many layers of thin and fleecy clouds, or a single deep layer of such clouds, existed, then either a set of shadows getting fainter and fainter at each successive layer* would be seen, or else a long cone of shadow passing through the range of the deep cloud-layer.

Now let us see whether Jupiter, the most conveniently placed of all the younger planets for purposes of observation, shows such appearances as these. Let it be premised that *ordinarily* we could not expect to see them, except on very rare occasions, when some exceptionally thin and fleecy cloud-layer, lying very high, received the first shadow,

allowing another to be formed on a cloud-layer lying many hundreds of miles below. It would probably be as rare to detect such appearances, supposing them specially searched for (which has never yet happened), as it would be to observe such a phenomenon as the reappearance of a satellite. And manifestly the lower shadow must be hundreds if not thousands of miles below the upper to be separately seen, since the shadow of a satellite would be about 2,000 miles in diameter, and the earth is so close to the sun compared with Jupiter that the line of sight to the planet is never more than slightly inclined to a line from the sun to the planet. Manifestly, if we looked exactly in the same direction as the sun's rays fall, we should not see the shadow at all; looking in a direction slightly inclined, we see the shadow thrown somewhat on one side of the satellite (never *very* far); a lower shadow would be thrown somewhat farther in the same direction, but only (in proportion) very slightly. To be thrown as much as 2,000 miles on one side so as to seem clear of the first shadow, the distance of the lower layer from the upper must be several thousand miles. As for seeing such a cone of shadow as is referred to in the last sentence of the preceding paragraph, that could scarce ever happen. In fact, if the requisite conditions existed, the chances would be that the lengthened shadow would be too faint to be seen at all. In like manner it might chance that where in reality there was a second shadow it would not be discernible, and the only perceptible effect be that the first shadow would not appear so dark as usual. Probably, on the whole, these being the actual conditions, the reader may consider that it should be all but hopeless to look for any such phenomena as we have referred to, among the recorded observations of the planet.

Let us see how this may be, however. Turning to Webb's little work, *Celestial Objects for Common Telescopes*, in which we may always expect to find the record of uncommon telescopic observations, we come across the following interesting passage: "Cassini once failed in finding the shadow of the nearest satellite when it should have been upon the disc. Gorton saw it grey on one occasion. The

* The shadows themselves would not grow fainter and fainter, but would be black right through the range along which they would lie; for no part of the sun's rays would reach any one of the spaces in shadow. But seen as they would be through partially transparent cloud-layers, and seen also as the partially illuminated cloud-layers would be *through* the shadows, these necessarily would grow less and less distinct the deeper they lay.

shadow of the second satellite has been seen specially indistinct by Buffham, Birt, and Grover. South many years ago published in one of the public journals a most interesting observation, which I greatly regret that I cannot recover; but I am confident as to its tenor, which was, that in his great telescope he perceived each of two shadows of satellites on Jupiter to be attended by a faint duplicate by its side, traces of which could be just detected with a smaller telescope of (I believe) five feet," in focal length. Again, in Chambers's *Descriptive Astronomy*, it is stated that "on April 5, 1861, Mr. T. Barneby saw the shadow of the third satellite first in the shape of a broad dark streak such as the cone of the shadow would present in a slanting direction, 'but it shortly afterwards appeared as a circular spot, perfectly dark.'"

Yet one other observation pointing in the same direction. If the lower shadow of a satellite can be at any time distinguished from the upper, then, should a great cloud-mass be floating at the higher level, its shadow ought to be similarly discernible, projecting to the same extent from under the cloud itself; which would hide the greater portion, but not all, of its own shadow. Now Mr. J. Brett, the eminent landscape painter, who from time to time employs his eye, well cultured to discern varieties of tint, upon the celestial bodies, wrote thus in a paper read before the Astronomical Society in May 1874: "I wish to call attention to a particular feature of Jupiter's disc, which [the feature, that is] appears to me very well defined at the present time, and seems to afford evidence respecting the physical condition of the planet. The large white patches which occur on and about the equatorial zone and interrupt the continuity of the dark belts are well known to all observers, and the particular point in connection with them to which I beg leave to call attention is that *they cast shadows*; that is to say, the light patches are rounded on the side farthest from the sun by a dark border shaded off softly towards the light, and showing in a distinct manner that the patches are projected or relieved from the body of the planet. The evidence which this observation is calculated to afford refers

to the question whether the opaque body of the planet is seen in the dark belts or the bright ones, and points to the conclusion that it is not seen at all in either of them, but that all we see of Jupiter consists of semi-transparent materials. The particular fact from which this inference would be drawn, is, that the dark sides of the suspended or projected masses are not sufficiently hard or sharply defined for shadows falling upon an opaque surface, neither are they sharper upon the light background than upon the dark." This point Mr. Brett proceeds to deal with by reasoning which has a special value because relating to a subject in which he is an expert. "The laws of light and shade upon opaque bodies," he remarks, "are very simple and very absolute; and one of the most rudimentary of them is that every body has its light, its shade, and its shadow, the relations between which are constant; and that the most conspicuous and persistent edge or limit in this association of elements is the boundary of the shadow; the shadow being radically different from the shade in that its intensity is uniform throughout in any given instance, and is not affected by the form of the surface on which it is cast, whereas the shade is distinguished by attributes of an opposite character. Now if the dark spaces adjoining the light patches on Jupiter, which I have called shadows, are not shadows at all, but shades, it is obvious that the opaque surface of the planet on which the shadows should fall is concealed; whereas, if they are shadows, their boundaries are so soft and undefined as to lead to the conclusion that they are cast upon a semi-transparent body, which allows the shadow to be seen, indeed, but with diminishing distinctness towards its edge, according to the acuteness of its angle of incidence. Either explanation of the phenomenon may be the true one; but they both lead to the same conclusion—namely, that neither the dark belts nor the bright ones are opaque, and that if Jupiter has any nucleus at all, it is not visible to us. . . . By the kind invitation of Mr. Lassell I had an opportunity, on the 20th of April, of examining the disc with his twenty-foot reflector of two-foot aperture, and I found this large instrument confirm my impressions concern-

ing the shadows in the most satisfactory manner."

There remains one peculiarity in the appearances resulting from the earth's condition during the remote period we are dealing with, which might possibly, though perhaps *barely*, have been detected by observers on Venus or Mercury. The shadow cast by the earth upon the moon—that is, the true shadow, not the mere penumbra—has a round shape, corresponding to the fact that the body casting it is a globe. But of old, when irregular cloud-masses and cloud-layers, various in shape and extent, were suspended in the deep atmosphere of our planet, it must necessarily have happened that at times the outline of the shadow was irregular, and that in a marked degree. The irregularity, in fact, would correspond closely in degree with the occasional irregularity of the earth's apparent figure arising from the same cause (though it is possible that it might have been at times more clearly discernible, as not affected to quite the same degree by irradiation). Now here is a peculiarity which we could not expect to recognise in the case of our heretofore chief test-planet, Jupiter. No telescope yet made by man, probably no telescope man ever will make, would show peculiarities in the shape of Jupiter's shadow on one of his satellites. No one has ever yet claimed to have seen the outline of that shadow at all, far less to have been able to discern its true shape; and it is not likely that any one ever will. But in this case the planet Saturn may help us; for *his* shadow is not merely cast at times upon the small discs of his distant moons, but rests constantly upon the broad expanse of his mighty rings—

While Saturn whirls, his steadfast shade
Sleeps on his luminous ring—

and that shadow we can study, despite the vast distance of the planet, with a fair chance of detecting peculiarities in its shape, should such at any time exist.

Let it be noticed at the outset that it is perfectly easy to calculate what the shape of the shadow *should* be, if Saturn were a solid globe and the rings' surface perfectly flat. The astronomer knows that at one time, on these assumptions, the shadow would be hidden, at another visible above or below the planet's globe; at one time to the east of the globe, at

another to the west, and always with an elliptical (but very nearly circular) outline, not quite sharply defined, but with a slight fringe of shading only discernible in powerful telescopes. In like manner we may note, in passing, that the shape of the rings' shadow on the globe would always be calculable; and we know that, when visible at all, it should appear as a black curved streak, either above or below the ring, and perfectly smooth in outline. Again, whatever irregularities there may be in the level of the rings can very little affect the apparent shape of either shadow, because we know from the edge view of the rings that such irregularities are slight compared with the thickness of the rings, which itself is not great. So that any irregularities of a marked character in either shadow must be referred to that cause alone which is competent to produce them; viz., irregularity in the cloud-layers and cloud-masses floating in the deep atmosphere of the planet.

So much premised, let us see what the records gathered by astronomers have to tell us on this point. We turn to a series of papers on the planet Saturn in the *Intellectual Observer* for 1866, by Mr. Webb, and we find the portion relating to the shadows opening thus: "From an early period, irregularities have been remarked in the form of the shadows which the globe and ring mutually cast upon each other." Mr. Webb deals first with the shadow of the ring, with which at present we are not directly concerned; though, of course, any irregularities in that shadow, like the irregularities in the shadows of Jupiter's moons, already described, indicate the depth and the occasionally irregular arrangement of the cloud-envelopes. Mr. Webb, in fact, after describing such irregularities, rejects, first, the theory that they are caused by irregularities in the ring; secondly, the theory that the globe's surface is irregular; and, thirdly, the theory that the ring has an atmosphere through which the sun's rays are irregularly refracted,—in fine, "passing over this difficulty as insoluble," which is not a very satisfactory result. Going on to consider the shape of the shadow of the planet on the rings, he mentions, first, how such first-rate observers as Sir W. Herschel, Lassell, Dawes, and Secchi saw the outline of the shadow concave,

instead of convex. Next, Dawes on one occasion saw the shadow irregular in outline where it crossed the bright ring. In October, 1852, Lassell saw the shadow on both sides of the globe. The younger Bond, of Harvard, Mass., saw the same; on November 2, saw the shadow winged. November 3, Tuttle saw the shadow on both sides, on which he *naïvely* asks: "What can this mean?" On November 29, De la Rue saw the shadow on both sides, and wrote: "This is very remarkable, but there can be no question as to the fact;" both shadows looked "like objects seen by mirage"—a remarkable expression. Then we find these observers, and others of equal repute, describing the shadow as having horns, ears, a "roof" (pictured with two projecting eaves), an inlet, a single ear, a reversed edge. Secchi writes: "*L'ombre assez curieuse, elle est renversée et ondulée.*" On one occasion Bond saw two shadows—one black, the other "a narrow, ghostlike shade." Of this faint shadow he says: "I was much impressed by the fact that the outline was preserved perfectly, while the intensity of the shadow was very feeble." Was not this *certainly* either the faint shadow of a deep partially transparent cloud-layer, or a dark shadow seen *through* such a layer?

After enumerating a number of such cases, Mr. Webb proceeds: "Thus far extend our facts. What shall we say in explanation of them? Can we charge them upon personal or instrumental peculiarities?"* It seems not possible, since, in the main, they are agreed upon in England and Italy, and Malta, and India, and the United States. Some of the most singular statements, it is true, come from America alone. But, as they have often the concurrence of more than one observer, so the optical capacity of a telescope, which in favorable air would bear distinctly a power stated to be 1,560, leaves small chance of appeal." (He might have added that the American astronomers were second to none in observing skill, and that the American skies are particularly favorable for observations of the class in question.) "In fact, it is," Mr. Webb proceeds, "a

remarkable circumstance that the mystery of the subject has increased under closer, more powerful, and more extended scrutiny. Some of the phenomena may admit of a more or less probable solution. For instance, the apparent concavity of outline might be explained as a deception similar to those optical perversities illustrated by Mr. Proctor," in an article on Saturn's square-shouldered aspect. "But the 'ears' projecting, even when the true shadow was invisible—the two shadows, when one only should have been seen—the 'roof' and 'inlet,' and the varying depths of shade in different parts, are alike too clearly attested for doubt, and too incomprehensible for explanation." (*Cela dépend.*) "We might take refuge to a certain extent in the idea of varied curvatures in the shadowed surfaces; and, in order to meet the objection arising from the evanescent thinness of the rings," we might "speculate on some force emanating from the sun disturbing the level of the rings. But even after we have ventured this daring" (and, in fact, impossible) "effort, we find other features as intractable as ever. Some things look like effects of an atmosphere very irregularly distributed round the ball, and possessed of properties greatly dissimilar to those of ordinary gases; but this is undiscoverable, just where it ought to be most apparent," where the remoter parts of the ring meet the outline of the disc obliquely.

But there is not one of these phenomena which cannot be explained by the theory of a very deep atmosphere, not "irregularly distributed," or "possessing properties greatly dissimilar to those of ordinary gases," but irregularly laden with cloud-masses. In fact, these occasional peculiarities in the shadow are thus brought into exact correlation with the peculiarities observed occasionally in the planet's shape, as noted in the first part of this paper.

We might note here other circumstances in the earth's youthful condition. For instance, from time to time the ruddy glow of her intensely-heated surface must have been visible through breaks in her cloud-layers; and just such occasional views of Jupiter's heated surface seem to have been obtained on those occasions when the usually cream-

* We have altered a word here, and perhaps marred the sentence; but the original word "equation" would have no meaning for many readers of these pages.

white equatorial belt has shone with a ruddy color. But this consideration, and others connected with the quantity of light received from Jupiter and Saturn have already been dealt with at considerable length in these pages.

It appears to us, in fine, that all the evidence, both *à priori* and *à posteriori*, corresponds with the theory which we have brought before the reader, that a planet during its extreme youth has its oceans floating in the form of cloud-masses and cloud-layers in a very deep atmosphere. We have seen reason, first, for believing that the intense heat of a planet, for many ages after its first formation, would keep the oceans in this cloud-like condition. Then, looking around for planets such as we might suppose to be much younger than the earth, we have seen that Jupiter and Saturn, the giant planets of the solar system, are probably the youngest (in this sense), always excepting the sun, which is in an earlier stage than any member of his family. And, considering what appearances a planet with a very deep cloud-laden atmosphere might be expected to present, we have found that just such appearances are presented by the planets Jupiter and Saturn, the phenomena described not being seen at all times, but occasionally, and in varying degree, precisely as we should expect from the variable causes producing them. We have also seen that the small density of the giant planets cannot readily be otherwise explained than by the theory that we do not see their real surface, but the outer surface of cloud-layers enveloping them. Moreover, while not a single fact known about the great planets is opposed to this theory, there are some facts, as we have seen, which cannot *possibly* be explained on any other theory. But when so much as this can be said of any theory, the theory may be regarded as established.

When the earth and sea were young, then, the earth's whole frame was intensely heated. Her real surface was doubtless partly solid and partly liquid then, as now; but the solid portion glowed with ruddy and in places with white heat, while the liquid portions, instead of being water, as now, were formed of molten rock. Above this surface, with its "tracts of fluent heat," was the

fiery atmosphere of that primeval time, enormously deep, complex in constitution, bearing enormous masses of aqueous vapor, and every form of cloud and cloud-layer, swept by mighty hurricanes whose breath was flame, drenched with showers so heavy that they might rather be called floods, and tortured by the uprush of the vaporous masses formed as these floods fell hissing on the earth's fiery surface.

After myriads of centuries came the time when the surface so far cooled as no longer to glow with ruddy light, and no longer to reject by vaporising the waters which fell upon it. Then a fearful darkness prevailed beneath the still mighty canopy of cloud; for only little by little, by very slow degrees, would the water descend upon the earth's surface. Some, indeed, have thought that it was this stage of the earth's past which was described in the Bible words: "The earth was without form and void, and darkness was upon the face of the deep;" noting, in particular, that the coming of light (because of the descent of the waters upon the earth, according to this view) was followed by the separation of waters under the firmament from waters above the firmament, (that

Expanse of liquid, pure,
Transparent, elemental air,)

the waters under the heaven being next a thered together into one place, and so forth. But we must confess that this interpretation of the narrative, sometimes called the vision interpretation, seems to us very far-fetched and unnatural; though we are in no way concerned here to oppose it, deeming it only necessary to mention that, for our own part, we cannot doubt that the writer of the narrative wished to be understood as describing what really occurred, not appearances shown to him in a vision.

A question which has long been regarded as among the great mysteries of nature—the question, How did the seas become salt—seems to us to find a ready solution when we consider that the ocean once formed the earth's cloud-envelope. We may, in fact, regard the oceans as holding in solution what was washed from the earth or otherwise extracted from its substance during the ages when the waters of ocean were pass-

ing from their former to their present condition. For then all the conditions assisted the action of the waters themselves—the intense heat of the earth's crust and of the atmosphere, the tremendous atmospheric pressure, and consequently the high boiling point (so that the waters first formed on the earth's heated crust must have been far hotter than is boiling water at the present time), and the presence also in the atmosphere of many vapors which would greatly help the decomposing action of the water itself. Consider, for instance, the following description, abridged from a paper by Dr. Sterry Hunt, the eminent Canadian chemist and geologist. After showing that carbonic acid, chlorine, and sulphurous acids would be present in enormous quantities in the primeval atmosphere, besides, of course, still vaster quantities of the vapor of water, he proceeds: "These gases, with nitrogen and an excess of oxygen, would form an atmosphere of great density. In such an atmosphere, condensation would only take place at a temperature far above the present boiling point; and the lower levels of the earth's slowly cooling crust would be drenched with a heated solution of hydrochloric acid, whose decomposing action, aided by its high temperature, would be exceedingly rapid. The primitive igneous rock on which these showers fell probably resembled in composition certain furnace slags or volcanic glasses." The process of decomposition would continue "under the action of the heavy showers until the affinities of the hydrochloric acid were satisfied. Later, larger quantities of sulphuric acid would be formed, and drenching showers of heated solutions of this energetic dissolvent would fall upon the earth's heated crust. After the compounds of sulphur and chlorine had been separated from the air, carbonic acid would still continue to be an important constituent of the atmosphere. It would be gradually diminished in gravity," through chemical processes resulting in the formation of various clays, "while the separated lime, magnesia, and alkalis, changed into bicarbonates, would be carried down to the sea in a state of solution."

Here we seem to see a fair account rendered of the enormous quantity of

matter forming collectively what is called the brine of the ocean, and containing, besides common salt (chloride of sodium), sulphuric acid, magnesia, soda, sulphate of lime, and other substances. The theory that these substances have been washed from the earth's surface by causes such as are now in progress, would not, we think, be seriously entertained if the vast amount of matter thus present in the waters of the sea were remembered and considered. Brine forms, on the average, about $3\frac{1}{2}$ per cent. of sea-water. Hence, if we take the average depth of the ocean at two miles,*

* In Maury's *Physical Geography of the Sea* there is a passage which we take to be one of the most amusing ever written in a work of the kind. The idea would seem to have occurred to him of estimating how much surface the salts of the sea would cover to the depth of a mile; and while in the midst of the calculation, he would seem to have grown weary of it. At least we cannot otherwise understand how he came to pen the following singular remarks: "Did any one who maintains that the salts of the sea were originally washed down into it by the rivers and the rains ever take the trouble to compute the quantity of solid matter that the sea holds in solution as salts? Taking the average depth of the ocean at three miles, and its average saltness at $3\frac{1}{2}$ per cent., it appears that there is salt enough in the sea to cover to the thickness of one mile an area of several millions of square miles." (The italics are ours.) This passage reminds us of one in an early volume of *Household Words*, where a very amusing account was given of the stores of wine in the London Docks, over which the writer is supposed to be shown, collecting materials, *but also tasting wine*, as he proceeds. The gradually increasing effect of the wine-tasting is indicated very humorously. In one of the later stages of his progress, the writer enters into a computation of the amount of wine wasted in the process of cleansing the glass with wine. (We write from memory, and possibly, as many years have passed since we read the passage, we may not be correct in details.) Assuming so much wasted at each cleansing, so many visitors, each tasting so many times, and so forth, "then," says the writer, "it may be shown that in each year 800 bottles, or it may be 8000 bottles, of wine are wasted. And should any one object that there is a considerable difference between 800 and 8000, all we have to say is that the principle is the same," etc. Captain Maury passes on, however, without any allusion to the somewhat unexpected vagueness of his conclusion. "These millions of cubic miles of crystal salt have not made the sea any fuller," he proceeds. "All that solid matter has been received into the interstices of sea-water without swelling the mass; for chemists tell us that water is not increased in volume by

or, roundly, 10,000 feet, it follows that, if all the water of the sea were evaporated, there would be left a deposit of salt averaging 350 feet in depth all over the present floor of the sea. This would correspond in quantity to salt covering all the present land surface of the earth to a depth of a thousand feet, or to a deposit *two hundred feet deep over the entire surface of the globe*; so that the idea of its having been washed from the land is altogether inadmissible. It may, indeed, be urged that, as the process of washing down from the land is continually going on, only a sufficiency of time would be needed to account for any quantity whatever of sea-salt. But apart from the fact that only a certain thickness of the solid crust, and that thickness by no means very great, could be drawn upon for the supply, and that the very continuance of the process shows us that even that portion of the earth's crust has not been drained of its salts, there is every reason to believe that the extraction of salt from the sea is going on and has been going on for many ages past at fully as great a rate as the addition of fresh salts. Although the process of evaporation cannot remove the salts, these, as Maury justly notes, can be extracted by other processes. "We know," he says, "that the insects of the sea do take out a portion of them, and that the salt-ponds and arms which from time to time in the geological calendar have been separated from the sea, afford an escape by which the quantity of chloride of sodium in its waters—the most abundant of its solid ingredients—is regulated. The insects of the sea cannot build their structures of this salt, for it would dissolve again as fast as they could separate it. But here the ever-

ready atmosphere comes into play, and assists the insects in regulating the salts. It cannot take them [the salts] up from the sea, it is true, but it can take the sea away from them; for it pumps up the water from these pools that have been barred off, transfers it to the clouds, and they deliver it back to the sea as fresh water, leaving behind the salts it contained in a solid state. These are operations which have been going on for ages; proof that they are still going on is continually before our eyes; for the 'hard water' of our fountains, the marl-banks of the valleys, the salt-beds of the plains, Albion's chalky cliffs, and the coral islands of the sea are monuments in attestation."

We must, then, regard the salts of the sea as in the main dissolved from the solid crust during that remote period when the seas were young. The seas thus indicate to us the nature of those vast chemical processes through which the earth had to pass in the earlier stages of its history. If the present crust of the earth did not afford, as it does, the clearest evidence of a time when the earth's whole frame glowed with intense heat; if we could not, as we can, derive from the movements of the celestial bodies, as well as from the telescopic appearance of some among them, the most certain assurance that all the planets, nay, the whole of the solar system itself, were once in the state of glowing vapor; the ocean brine—the mighty residuum, left after the earth had passed through its baptism of liquid fire, would leave us in little doubt respecting the main features at least of the earth's past history. The seas could never have attained their present condition had not the earth which they encompassed when they were young been then an orb of fire. Every wave that pours in upon the shore speaks to us of so remote a past that all ordinary time-measures fail us in the attempt to indicate the length of the vast intervals separating us from it. The saltiness of the ocean is no minor feature or mere detail of our globe's economy, but has a significance truly cosmical in its importance. Tremendous indeed must have been the activity of those primeval processes, fierce the heat of those primeval fires, under whose action sixty thousand

the salt it dissolves. Here we have, therefore, an economy of space calculated to surprise even the learned author himself of the *Plurality of Worlds*." All which, so far as appears, is *apropos de bottles*. Within the same page, which, we submit, is inferior to Maury's usual style, we find him, in dealing with the question What was the Creator's main object in making the sea salt? advancing the startling proposition that "all the objects of the salts of the sea are *main objects*." (The nature of the context, which is serious, even solemn, will not allow us to suppose that any pun was here intended.)

millions of millions of tons of salts were extracted from the earth's substance and added to its liquid envelope.

[Since this essay was in type, a paper has been read before the Astronomical Society by Mr. Brett, describing observations altogether inexplicable, except by the theory we have advocated above. They relate to the movements of two large white spots on Jupiter's chief belt. Both these spots were so shadowed as to indicate that they were in reality bodies of globular shape,—no doubt rounded masses of cloud, floating in the relatively transparent atmosphere of the planet. "The fact that they are wholly immersed in the semi-transparent material of the planet is indisputable," says Mr. Brett, "since they gradually disappear as they approach the" edge of the disc, "and in no case have been seen to project beyond it." The distinguishing peculiarity of these bodies was, however, their rapid motion, as though gaining on the planet's rotation. The average motion was estimated by Mr.

Brett at about 165 miles per hour, but this estimate would have been somewhat reduced had he taken into account, as he should have done, the changing position of the earth, relatively to Jupiter. Still, even after adding to this reduction all that can possibly be attributed to errors of observation, there remains a considerable motion of these cloud-masses, each of which was about half as large as the whole globe of the earth! It may, perhaps, be thought that we have here attached too much weight to the telescopic observations of one who is skilled rather in art than in science; and in fairness it must be admitted that about half Mr. Brett's observations have been regarded more than doubtfully by astronomers. But this observation, like the one described in the body of the above essay, depends only on accuracy in estimating the apparent position of two spots on the planet's face; and so skilful a draughtsman as Mr. Brett cannot have made any large error in an observation of the kind.]

Cornhill Magazine.

THE STORY OF A LIFE.

A CHILD in a nursery crying—a boy in a cricket-field "out!"—
A youth for a phantasy sighing—a man with a fit of the gout—
A heart dried up, and narrowed—a task repeated in vain—
A field ploughed deep and harrowed, but bare and barren of grain.
Some sense of experience wasted, of counsel misunderstood,
Of pleasure, bitter when tasted, and pain that did him no good.
Some sparks of sentiment perished—some flashes of genius lost—
A torrent of false love cherished—a ripple of true love crossed.
Some feeble breasting of trouble, to glide again with the stream—
In principle void as a bubble—in purpose vague as a dream.
A future hope half-hearted, for dim is the future now
That the triple cord has parted, and death is damp on the brow.
And a debt is to pay by the debtor—a doctor, a lawyer, a nurse;
A feeling he should have been better, a doubt if he could have been worse;
While the ghostly finger traces its ghostly message of doom,
And a troop of ghostly faces pass on in a darkened room;
With ghostly shapes to beckon, and ghostly voices to call,
And the grim recorder to reckon, and add the total of all.
The sum of a life expended—a pearl in a pig-trough cast—
A comedy played and ended—and what has it come to at last?
The dead man propped on a pillow—the journey taken alone—
The tomb with an urn and a willow, and a lie carved deep in the stone!

Temple Bar.

FAIRY PLAYS.

Why are genuine fairy stories nearly all of them old? If we look through Grimm's collection, or any other of sterling quality, we find that almost all the plots date back to that mystic period in which their scene is laid—'once upon a time': the authors are unknown, the tales,

whose literary merit is sometimes very high, are really legends of the country-folk, preserved only by continual repetition, never written down till they have attained a green old age. Like the *Iliad* and the *Odyssey*, these charming traditions have come down to us, altered

no doubt during their descent through the ages, but perfect and harmonious wholes, artistic though so simple, quite surpassing all modern rivals.

The one thing needed in the creation of a fairy story is the quality, undefined but unmistakable, known as *genius*; in those oldest times men of literary genius, poets, had hardly any mode of expression but these fanciful legends, and the world of primary conceptions and natural illustrations was spread freely around them, full of novelty and freshness. They drew from the general storehouse of imagery, and appealed to the general mind and feelings of simpler generations than ours.

Yet the popularity of fairy tales in the present day speaks well for the growth of intellect. Fairies of the true kind can be created—can be appreciated even—only by minds either truly childish, or of full-grown manliness. Last century there was prevalent, in the most influential literary circles, the contempt for childish things which characterises those men who never reach full maturity of intellect—who are, as it was prophesied in the *Noctes Ambrosianæ* that Macaulay would be, all their days only clever lads; self-satisfied, for ever important, dogmatic, and grave. Now, however, we have long passed this stage; ill-natured people might almost say that we had reached a second childishness. No books of the age have spread farther, have been translated into more tongues, than Andersen's delightful legends; and, though they may be bought ostensibly for the nursery, the wisest of grown-up people display an acquaintance with them which could never have sprung simply from overhearing the talk of the children—which is indeed much more thorough, if less familiar and minute, than that of children could be.

With fairy tales so popular, it is not to be wondered at if there is an abundance of histories of this pleasantest department of literature, of essays on its significance and origin, of attempts to prove that Little Red Ridinghood or Jack the Giantkiller can be connected with the worship of the stars, let us say, by the South Sea Islanders; like most other delightful things, it seems in danger of being done to death. Only one branch of the subject remains untouched—the

fairies created for the stage; no one has yet, we believe, written their history, investigated and classified and labelled them. Without making beautiful things dry and repellent by over-scientific description, we may surely ramble for half-an-hour among the many sweet unfrequented nooks and corners of this region of fairyland.

The more beaten ways—the fairy dramas of England, France, even Germany—we will not to any great extent go into; one quaint old play a little earlier than Shakespeare we will speak of, and one German dramatist hardly known out of his own country, but we will chiefly explore the less-known literatures of Venice and of Denmark, which are not only less accessible to general readers, but also, we think, of a rarer and more individual charm than any perhaps of the more famous elfin dramas—only excepting the Shakespearian: the *Midsummer Night's Dream* and the *Tempest* must for ever stand alone and unrivalled, and need no words of ours. Of the French fairy drama, by the way, we may simply say that it does not exist; the mass of extravaganzas which has so long cumbered the stage both of Paris and London is entirely worthless from a literary point of view, and we allude to it only to mention that the one fairy gem which might have shone through its rubbish—George Sand's little romance called *Le Drac*—has never, to the best of our belief, been acted.

The plays recently produced by W. S. Gilbert are worthy of more careful attention, though they want the spontaneity and charm of poetic feeling that all fairy work should have. But the *Palace of Truth*, *Pygmalion* and *Galatea*, *The Wicked World*, are within the reach of everyone; and we will only say of them that, in spite of a certain hardness and monotony, their careful workmanship, artistic conscientiousness, and originality will give them always a worthy place in the history of the stage.

One general fact about the fairy drama we must notice before we proceed to particulars—how few real masterpieces it contains, how few writers of a high class have been strikingly successful in it. Yet what beings could seem more naturally adapted for the stage than the dwellers in fairyland, with their pic-

turesqueness, their merriment and pathos, the licence with regard to time and place which their historians are allowed, the loosening of the fetters of probability which attends the accounts of their dealings with mankind? Perhaps the difficulty is that few dramatists add to the practical vigor needed to keep constantly alive the attention of an audience either of the alternative necessities of success among the fairies—childlike simplicity, or rich poetic imagination. To write fairy stories one must be either an Andersen or a Spenser, a child or a poet; and it is seldom that either has the sharp common sense needed for the stage.

However, there are names well worthy of our notice among elfin dramatists—besides Shakespeare. Gozzi and Andersen, Raimund and Heiberg, have ruled over kingdoms in the land of dreams, very fair and prosperous; and before we turn to their stores of wealth there is one old play, by one old British playwright, on whose pleasant quaintness we should like to look for a moment.

The *Old Wives' Tale* of Peele, who 'flourished' in a quiet sort of way just before Shakespeare, is perhaps of all fairy plays the only one which is distinctively English, racy of the soil, as are Andersen's of Denmark, Gozzi's of Italy. It is homely, rough, vigorous, full of extravagant incident and burlesque humor; the very mixture of nationalities indicated by the names of its *dramatis personæ* reminds us of a failing of which the English have been accused ever since the days of Portia. We find familiarly associated Sacrapant, Corebus, Eumenides, Huanebango, Venelia, Zantippa, Wigen, and the 'Ghost of Jack,' while the characters of the Induction (as we may, after Shakespeare, call it) are Antic, Frolic, Fantastic, Clunch, and Madge.

This Induction gives a pleasant and poetic dreaminess to the story which it frames; the old wife, Madge, is beginning her tale of wonder to two benighted travellers, sitting up with her round the cottage fire, when the characters of whom she is speaking—the brothers, the magician, the enchanted maiden—appear and carry it on, interrupted by humorous comments from the hearers, and now and then a rustic chorus of haymakers. The legend itself is bustling and cheery,

if not over-carefully constructed; and it contains the elements of many of the most popular stories of later times. Milton's *Comus* is, strangely enough, exactly foreshadowed in the wanderings of the two brothers after their sister, who is in the power of the foul magician Sacrapant; Andersen's beautiful tale *The Fellow Traveller*—a legend common to many countries—begins in precisely the same way as that part of our story which relates to the 'Ghost of Jack'; and in his play of *Hyldeemoer* is a maiden under a charm of oblivion, whose position only repeats that of Delia here. Mingled with these more poetic incidents, however, we have the humors, entirely English, of the Sexton and Wigen—to whom a needy young hero pays his last pence for the burial of a stranger, briefly mentioned as Jack, whose ghost afterwards befriends him—and of one Huanebango, a burlesqued braggart, who declaims absurd hexameters, and may perhaps be looked upon as in same way an ancestor of Pistol and his crew, and certainly as a relation of the Italian captains Spavento, Spezzafer, Escobombardon della Papirottonda.

To this Italian school let us now turn—at least, to its greatest representative, Carlo Gozzi, the successful rival of the celebrated Goldoni. He was born in 1722, in the heyday of the fame of the great Venetian 'masks'—lineal descendants, it is said, of the 'mimes' of the Roman *Fabula Atellana*—of whom he made use in his comedies constantly and with the greatest effect, and of whom we must say an explanatory word or two before we describe his style of plot and dialogue.

Each of these stock personages of the Italian stage—Arlecchino, Pantalone, Brighella, Tartaglia, &c.—had in the beginning a distinct character of his own; but the parts they were made to fill in different plays varied considerably. Brighella, at first a Bergamese bully, is in one of Gozzi's fables a court poet, of a very original and comic kind, in another a prime minister, in another an attendant; Tartaglia, a stammering Neapolitan, is now a king, now a much-enduring vizier; Pantalone, originally a Venetian dotard, fills various parts of the attached dependant species, and is generally expected to make himself more or less

ridiculous. There was no doubt a general likeness between all these rôles, however much they differed in detail, and they were always played by the same actors as long as they remained in the company. Those which Gozzi repeats most frequently are Tartaglia, Brighella, Truffaldino, Smeraldina, and Pantalone; and these all appear in one of his brightest and most characteristic 'moral tragi-comedies,' *L'Augellino Belverde*, of which we will say a word or two, selecting it as newer in story than *Il Corvo* or *Il Ré Cervo*; *Turandot*, which is equally original, and, through Schiller's translation, better known, cannot strictly be called a fairy play.

The *Little Green Bird* differs from most pieces of its class in being avowedly and distinctly morai—a play with a purpose; but neither this somewhat alarming fact, nor the non-appreciation of the covert ridicule of Goldoni which it no doubt contains, can materially diminish its charm for modern readers. In the one great quality needed in fairy comedy—utter spontaneity, absolute ease—this delightful play abounds, if it be possible, to excess. The author races and rollicks on, though a story so full of incident as to defy description or compression, enjoying his work as much as must his actors and his hearers; and many entire scenes of practical fun are merely set down, as was then the custom, in brief suggestions to the comedians. There is never a moment's lack of frolic, of incident, of imagination; the very list of characters, with its 'statues that talk,' 'water that sings,' 'speaking apples,' at once carries us to a new and preposterous world, where we see through rose-colored Venetian spectacles visions from the Arabian Nights. No fairy tale of Denmark or of England has such fun as this; if those are beautifully childlike, this is boyish, smacking of school-days, animal spirits, abundant love of practical joking. Its story deals with two young would-be philosophers, not at all unlike some of the latest specimens of youthful nineteenth-century intellect: of the gratification of their absurdest whims, and their consequent misery: of an amorous king, a greedy poet, a despotic dowager, a faithful comic servant of the old familiar type: of dreadful gardens, with skeleton sentinels: of princesses imprisoned, en-

chanted princes, living statues—all is 'antic, frolic, and fantastic,' to quote again our *Old Wives' Tale*, and yet all, wonderful to say, is part of and necessary to the story.

And these facts bring us to one of the main differences between the fairy drama of Italy and that of Denmark; the former excels in invention of incident and cleverness of construction, the latter in poetry of character and situation. Of course, every good fairy play ought both to abound in novel incident and to have an atmosphere of the purest poetry; but when either Gozzi or Andersen falls short of success we may be sure that the former lacks depth of poetic feeling, the latter is wanting in invention and knowledge of the stage.

For we doubt whether it is too much to say that throughout the realm of Danish elf-lore the element of simple poetry is never missing; turn to Oehlenschläger, Heiberg, Andersen, or Hertz, each has the same sweet note—clearest of all, we think, in Andersen, strongest no doubt in Oehlenschläger, but very like and very pure and lovable in all.

The greatest name in the history of the little stage of the North is, of course, the one we have last mentioned; but the three fairy plays which Oehlenschläger has written hardly stand in the front rank of his works. *Aladdin* is an enormously long and complete dramatic version of the old story, hardly altered in any detail; and *Rubezahl* is merely a succession of revengeful tricks and practical jokes played by the offended spirit of a mountain—it hardly hangs together sufficiently to be worthy of the name of a play.

Faruk, his third fairy-piece, is of much greater value; it begins in the true romantic spirit, with the four children of a king seeking in a mystic wood for a flower that shall foretell which among them is to succeed their father. One is an ambitious and unscrupulous prince, one weak and indolent, one a warrior-princess, rough and masculine, but not without a certain nobility of character; the fourth is dreamy, poetic, gentle—he wanders in, drawn onwards by the beauty of the forest, not led, like the others, by ambition. That he will win is from the first too apparent, and the play, though it has throughout the right poetic

feeling, wants strength of plot and construction, while of its characters only one stands out with any clearness—the warrior-girl, Satchekara. The drama also contains one far too ghastly incident—the shooting by the princes at their father's corpse, placed upright in the public square.

A long series of simple and pretty comedies was brought out early in the present century by Johan Ludvig (the younger) Heiberg: *Pottemager Walter*, *Syvsoverdag*, *Fata Morgana*, *Alferne*, are among the best known. His style is chiefly to be distinguished from Andersen's by the fact that it is less strongly characteristic, less poetic perhaps and more dramatic; we might call it the average Danish style, while Andersen's is the extreme, almost ultra-national, more Danish than any other Dane's. Heiberg has considerable variety of subject: *Pottemager Walter* is a queer play, not easy to define—a comedy interspersed with sonnets, in which, nevertheless, Harlequin plays a part. *Fata Morgana* is of strongly Italian type; it treats of the famed enchantress, and her defeat by a true lover, and numbers among its characters both Arlecchino and Pierrot. *Syvsoverdag* is one of the many dream-plays to be found in all languages; it is opened by Phantasus, and a moral lesson is taught alike to its principal character and the audience by a vision enacted in its midst. *Julespøg og Nytaarsløier* ('Christmas Jest and New Year's Frolic') is a merry medley in two acts and an intermezzo, and its list of *dramatis personæ* is the most extraordinary we ever met, comprising among other characters, the Angel Gabriel, the Poet, Harlequin, King Henry of Sicily, Phantasie ('a little blue bird'), a chorus of small angels, the Public (a colossal monster), 'a pair of lovers,' 'another pair,' and the Three Kings—Caspar, Melchior, and Balthasar.

After this we turn with relief to the simplicity of the same writer's *Alferne*, a story of a young maiden who is carried away to fairyland, and returns strange and innocent after a lapse of years, which closely resembles, even in metre, Hogg's beautiful poem. Must not the country here described have been like that to which Kilmeny wandered?

Now hast thou seen our Paradise?
We know not storm, nor snow, nor ice,
Eternal summer lulls us here,
Ne'er grow our green leaves sad and sere.
And yet, amid our pleasant mirth,
We yearning love the fallen earth,
Where all things grow, where nought can
stay,
Where all things blossom, all decay.
We long beyond all other bliss
Earth-children's rosy mouths to kiss:
Their eyes are lit with earthly fire,
Their lips are warm with sweet desire—
How fair they are, and fond, and bright,
How rosy-red and lily-white!
How merrily you darlings grow,
Faster than fairy thought can go—
For see, ere one could dream of it,
Your coats, unworn, too tightly fit;
The outstretched arm but half is drest,
Scarce-hidden is the maiden's breast.
While we poor elfs grow ne'er at all
But still are young and still are small!

With these verses from Heiberg, and with the bare mention of the name of Heinrik Hertz—made rather more familiar by Mr. Theodore Martin's translation of his pleasant and poetic little drama *King Ren's Daughter*—we will pass to him who is, beyond all other Danes alive and dead, known and beloved in the nurseries of every land—Hans Christian Andersen, undisputed emperor of the fairies. All his life he loved the stage and wrote for it; he was more ambitious of fame as an actor and dramatist than perhaps of any other glory. Yet the want of invention of which unfriendly critics in his own country accused him stood in his way here more than anywhere else; and of the four or five genuine fairy plays that he wrote, only one is an undoubted and complete success for him—for *Meer end Perler og Guld*, admirable as it is, is but a translation of Raimund's *Diamant des Geisterkönig*, richly embroidered by the Dane's quaint fancy, and gaining in poetry from the passionate love of travel that gleams through every one of his works.

Andersen is generally almost too quiet, too peaceful—shall we say again, too Danish?—for the stage, and too innocent of all knowledge of the art of construction; in a fairy story, above all, one should really never know what is going to happen next. This deficiency in plot is felt greatly in his *Lykens Blomst* and *Ole Luk Oie*, both comedies of the species—so well known in fable—which teaches the lesson of con-

tentment with one's lot by temporarily transporting one, whether simply in a dream or by some magic power, to the position or the days of the being one envies most; in neither piece is any novelty given to this well-worn situation, though Andersen could no doubt have made of either a delightful tale.

Agnete og Havmanden—‘Agnes and the Merman’—was apparently not intended for the stage. It is only the old story which has been told by many poets—supremely well by Matthew Arnold—and of which, curiously enough, the converse (the marriage of a mermaid to a mortal, and her ultimate return to the sea) is also a popular legend both in Ireland and Norway. In its first part the girl's mystic dreaminess—her yearning for the sea, as strange and powerful as Elsie Venner's more repulsive passion—is shown us with a poet's certainty and feeling; but the story as a whole is wanting in dramatic strength.

Hyldemoer is the only one of Andersen's fairy plays that can quite take rank with his stories: the charm of its naïve humor and simple poetry is so fresh and unforced that the little comedy may almost be quoted as the most perfect example we have of what a stage-story for children should be. It requires, no doubt, thoroughly sympathetic acting, and an audience able to appreciate the delightful good faith of the author; but these things given it would bring back to one a glimpse of childhood's purest poetry—of the days when one encamped under tables in proud delight, and burrowed with imaginary bears in the dark recesses of one's bed; when indeed the Mole's Palace would have been a place of real but pleasant terror, the Elder-mother an inhabitant, almost visible, of our own little garden.

The story of this *Phantasiespil*, as it is called, is simple but quite new—though the lady who gives it her name is well known in Danish legend.* We are guided through it by Phantasus, who fills the same office in Heiberg's *Sysoverdag*; he is discovered, when the play begins, sitting in the middle of the stage, his back to the audience. A full moon is

shining over an open meadow by the sea. Phantasus, who is dressed as a postillion, blows his horn; Echo answers. He listens, and then speaks—

Hark! Every note so full and clear!

It is verily Oberon's horn I hear.

[*He blows again, cracks his whip, and turns to the audience.*]

Now off we go! Are you all in your places,
Ladies and maidens and children small?
Flashing and flying, speed on we shall.
Over the tree-tops our equipage races,
By field and meadow and forest we go!
I know the way, above and below.

—All seated now in my omnibus?
Here sits the coachman. Who? Phantasus,
Known to lords and known to ladies,
Who the friend of every grade is—
And though he's little, as he stands here
He reckons full many a thousand year!

Well, I'm a lusty, flickering spark,
For ever in frolics I madly embark:
Now I build a snow-house with the Esqui-
maux,

Now swung in a palm-tree's top I repose,
To the palace, the hut, the inn, and the church
I come—in each Christmas-tree I perch!
I paint with flowers the frosted pane,
I am with Herr Sorensen, not in vain!

Yes, yes, I'm trusty. Have never a fear!
On their coachman the party may well rely:
We start on the tour—away we fly—
But a childlike faith ye may all have here.
Like Noah's ark is my omnibus,
And the broad full moon sweetly shines on us,
And you see outspread the field before ye.
So we start! Now you'll have a right Fairy
Story!

[*He blows his horn and cracks his whip, and a mighty rolling coach is heard. Phantasus disappears, and where he sat stands a great flowery hedge.*]

Could there be a more charming opening for an elfin story? It is perhaps in its perfect simplicity a little over the heads of a modern London audience; but with proper adjuncts of music, artistic scenery, and sympathetic delivery, it would put the placid and thoughtful burghers of Copenhagen into the mood of pleasant dreaminess fittest for the enjoyment of a homely nursery tale.

After Phantasus has started on his magic journey, four little Will o' the Wisps dance in, each with a flame on his head. They are hurrying over moor and moss with the news that their king has determined to seek a wife; and with him, who may be said to stand for Fire, are bound on a like quest representatives of the three other elements—the Butterfly (Air), the Mole (Earth), and the Merman, who is now a widower, desiring to be consoled for the loss of his

* Andersen has also a little story named after her, *Hyldemoer*: it is the one called in some translations ‘A Tale in the Teapot.’

Agnes. Then, singing, the little messengers hurry away, and the four seekers after matrimony one after another come in; first the Mole, breaking his way up through the earth, dressed in a fur pelisse, with a hat also of black fur, and his small pink hands showing; then, leading by the hand his little daughter, the Merman, in sea-blue, with a long seal-skin cloak and a hat shaped like a fish's head, which is surmounted by a wreath of rushes and a little golden crown; and after them the Butterfly and the Will o' the Wisp, whose dresses can easily be imagined, and whose volatile and vivid manners contrast strongly with the Mole's stolidity and the plaintive feebleness of the Merman.

The conversation which takes place between these four is really very funny, with its ceremonious introductions and its attempts at philosophical discussion, interrupted every now and then by the poor little mermaid's wail, 'I want to go home!' With a sort of innocent cleverness, their characters are contrasted—the most original being the Merman's, who adds to a kind of watery misery a fretful sense of his own importance, and who, wanting to obtain a really well brought-up governess for his child, is apparently willing to marry her to save wages. Finally, all four determine to woo the belle of Copenhagen, the daughter of the barber Bynke, and for this purpose to go to town disguised as ordinary mortals; the Butterfly as an aeronaut, the Merman as a diver, the Mole as a cellarman, and the Will o' the Wisp as a maker of Lucifer-matches.

They start, and next we find ourselves, at early morning, in the garden of the barber's house. In its midst stands an elder-tree, whose Witch or Spirit (Hyl-demoer, the elder-mother) gives the play its name, and on the magic property of whose blossoms—that of by their scent recalling, with irresistible power, early memories—the story in the end turns. Beneath its branches, Peter, the apprentice, is sadly buckling up his knapsack; he is about to start on his travels, leaving behind him all he loves—in other words, his master's beautiful daughter Maria, with whom he was brought up, whose cradle years ago he rocked. She comes, and, startled to hear that he is going so soon, naively confesses her love,

giving him a wreath of the mystic elder; they resolve to ask her father's consent, and when he comes they do so, with sufficient success to induce Peter to give up his *Wanderjahr* and stay at home. Then presses in a crowd of customers, and, chattering as is their wont, the barber and his assistant shave them; among others come the four wooers, in mortal guise, and, with the promptitude common in legends, they ask Bynke for his daughter's hand, which he, alas! seems not unwilling to grant to a 'suitor wissiller.' Peter asserts his claim manfully, whereupon all rush to turn him out—all, except the Mole. This designing gentleman, suddenly making his appearance as the villain of the piece, takes advantage of the confusion to place his hand on Maria's head and cause her to sink into the earth. When all look for her in surprise he feigns innocence, and they depart, vowing to search for her, find her, and win her. To Peter, however, in his despair, appears the elder-mother, who sits in her tree, arrayed in fresh green leaves, her hair of silver-gray, but her face still wonderfully young and bright; and 'from information received' from her, he descends into the earth to seek Maria, armed only with a branch of the blossoming elder.

Deep in the earth, in the Palace of the Mole, we hear voices of spirits. Phantassus appears, and a dark wall opening shows us Maria, under the influence of a spell of oblivion which the Mole has thrown over her, chanting dreamily a song to loneliness. Then comes the Mole with his deaf housekeeper, to whom he announces his approaching marriage, her infirmity causing a great deal of comic misunderstanding. But now the other Elements having discovered his treachery attack him; yet, though cold winds and streams of water penetrate to his subterranean palace, he is not overcome. Suddenly a scent of elder-flowers fills the air; the Mole and his housekeeper cannot imagine whence it comes, but neither can withstand its magic influence—they were formerly betrothed, and as the memory of their old love revives they fall into each other's arms, and finally go off together tenderly embracing. Then Peter appears, carrying the branch of elder which is spreading its wonderful scent around. He finds

Maria, who has forgotten him and all things, and only dreads to be aroused from her sweet loneliness. After a long struggle, his love and the elder awaken old recollections—as Kay's memory is revived in the *Snow Queen*—and she is won back from the land of dreams, from the cold and evil power of the Mole. At once they are encircled by the outspread branches of the elder—they are back in the little garden at Copenhagen; the sun is shining, Hyldemoer nods at them pleasantly from among the leaves, and with a song to the old tree, and congratulations and promises of wedding-gifts from the Merman, the Will o' the Wisp, and the Butterfly, the journey on which Phantásus has led us is ended.

With this specimen of its best characteristics we may leave Danish literature and turn to its nearest ally. Less simple, with more variety in style as in language, there is yet in the German fairy drama a good deal of likeness to the Danish, though it is the likeness of a large and busy town to a quiet seaside village—a town whose chief rulers, Schiller and the great Goethe, cannot condescend, like Oehlenschläger and Andersen, to the childish sport of a fairy play.

Indeed, the man whom we should select as the representative fairy-dramatist of Germany bears a name very little known, at all events, out of his own country—is certainly not what is generally called a genius, and cannot therefore be held a rival of Andersen or Gozzi. Yet Ferdinand Raimund (who lived in the early part of the present century) was one of the brightest and best of fairy playwrights—as successful on the stage, we should imagine, as any writer of this class. Without Andersen's special gift of poetry, or Gozzi's astonishing fertility of invention, he is yet invariably clear, sound, and interesting—nor would we wish to infer that he is in any way wanting either in imagination or humor. *The Diamond of the Spirit King*, *The Maiden from the World of Fays*, *The Barometer Maker on the Enchanted Island*, *The King of the Alps*, or *the Misanthrope*—these are some of his principal comedies, and, though perhaps their names hardly imply it, they cover a considerable variety of subject and style.

The first of these, as we have already said, Andersen has adapted under the title of *Better than Pearls and Gold*, and the difference between original and adaptation is very interesting; the gain in quaint, fresh humor, being perhaps partly balanced by some little loss of quick decided action. The play is simply a fairy-story of adventure, throughout merry and brisk—it is not without a vein of satire, and the element of modern fun, so dangerous in the hands of any but a genuine poet, is introduced with great success.

Somewhat of the same sort, and similarly suggestive of the Arabian Nights, is *The Barometer Maker on the Enchanted Island*, many of the leading incidents of which are used in a story published in the collection known as 'Grimm's Goblins,' under the name of *Little Mouch*. One of its magic 'effects'—the sudden growth of the noses of the characters on their tasting an enchanted fruit—suggests a question which must, we think, have often struck modern readers of Gozzi: how were the wonderful tricks and transformations in which these authors delight—the conversion of an old woman into a toad, or the change (perhaps not necessarily great) of a poet to a donkey—how were these effected in the sight of the audience? Surely in those days either machinists must have been very clever, or spectators of rare simplicity.

The Alpenkönig, a very different play, suggests in its principal incident another difficulty: it turns upon an exchange of outward appearance between two men, each of whom must nevertheless, it seems to us, have been represented throughout by the same actor. The hero of the story, a savage misanthrope, is shown the error of his ways by being made to witness (having himself taken the likeness of another man) the outrageous behavior of a being disguised as himself; a situation which must, though exceedingly amusing, have been very difficult to carry out properly. In other ways this *Alpenkönig* is a clever and original play, with some flavoring, though not a very strong one, of the poetry suggested by its title; and with, like almost every play ever written until the modern school of French dramatists arose, one or two entirely unnecessary scenes.

There is no need to go through the lengthy list of German fairy-dramas; most of them are something after the fashion of Raimund, few are devoid of a certain essentially-German poetry, many possess a queer glimmering of rural fun. The drollest that we know, beyond comparison, are Tieck's jovial adaptations—or mockeries—of the great fairy stories, *Bluebeard*, *Puss in Boots*, &c. The comments of the stage-spectators in *Puss in Boots*, their sympathy with the unnecessary lovers, the sentimental reminiscences aroused in them by the night-

ingale, are quite the funniest things of their kind in existence.

Nor is there any need, having glanced for a few moments at this dozen or so of pretty childish plays, to make any very profound criticisms upon them. They ought to be like children—that is all one can say: charming, full of unconscious poetry and humor, bright and brisk, abounding in animal spirits, and yet mannerly and well brought up. Finally, they must not be too big, and those who love them must not talk too much about them.—*Fraser's Magazine*.

THE BYWAYS OF BOOKMAKING.

EVERY literature possesses a body of rules teaching the poet and the dramatist what to avoid; and an ingenious Frenchman once published a guide to novel-writing which contained positive directions for pursuing that craft, so that with a little application every novel-reader might become his own novelist—at once the creator and consumer of his own literary smoke. No one by studying the *Ars Poetica* could make himself, in however small a degree, either a versifier or a playwright. But the author of the guide to novel-writing did at least aim at showing how novels might be cut out and perfected, or rather designed piece by piece, and put together, not indeed like boots and shoes, but rather like garlands of artificial flowers or elaborate ball-dresses. Perhaps, however, the novel-writing guide might be most fitly compared to a cookery book. It gave instructions on the choice of a heroine as Mrs. Glasse, or La Cuisinière Bourgeoise, tells you what sort of fowl to pick out for your contemplated hash. It recommended for some purposes a tender hero, for others a tough one. There was a chapter on the art of serving up the heroine, or, in other words, of introducing her to the reader. Then the hero and the heroine had to be stirred up together after certain forms, according as they were disposed to harmonise like cream and the yolk of egg, or were of seemingly antagonistic natures, like oil and vinegar. Hints were furnished on the preparation of incidental observations; and the art of blending reflection with narrative was fully treated. Of course

the villain was not forgotten—nor the story; and the intending novelist was strongly advised to make the latter “interesting.” The weakness of the book seemed to consist in this: that if the aspirant to the enviable position of successful novelist could make his story interesting—which he was enjoined to do without being told in what manner—the rest was comparatively without importance. To profess to teach a man the art of writing a novel, and to tell him, among other things, that he had better make his story interesting, is as good a joke in its way as that of informing the aspirant to poetical honors that when he has at last finished his work he had better keep it by him for nine years. The counsel has, in each case, an ironical look. But scanty thanks would be forthcoming alike from the poet—warned that when he has followed a number of maxims on the subject of poetical composition, the best thing he can do with his poem will be to hide it—and from the novelist—who, after many useful rules have been impressed upon him in respect to novel-writing, is further assured that he must make his story “interesting.” In an indirect manner the one is told as plainly as the other that teaching will be of no value to him.

If, however, authors cannot teach others how to conceive and bring forth works of art, they can sometimes explain how the idea and plan of their own creations first occurred to them. Edgar Poe has published a curious exposition of the genesis, or rather of the deliberate construction, of the *Raven*; an exposition, it

must be added, which is not accepted by all his admirers as having been made in perfectly good faith, and which is declared to be not a synthesis, but virtually an analysis. The late Alexandre Dumas, too, has told us how the main idea of one of his most successful plays first came into his head. He was walking down the Boulevard, when suddenly it struck him that a man found in a compromising situation with a woman might save her reputation by killing her and declaring that he had done so by reason of her resistance. Out of that idea was developed the drama of *Antony*. The fact may be interesting. But neither the starting point of Poe nor of Dumas could have been turned to account by one who was neither a poet nor a dramatist.

If, however, the secret of literary invention cannot be imparted, methods of borrowing literary materials with skill and success may easily be communicated. A regular school of plagiarism was maintained for a time in France, and among its pupils one of the most distinguished preachers of the seventeenth century, Fléchier, is said to have been included. Poetry, on the principle, perhaps, that "the poet must be born," does not seem to have been included in the course. Or it may have been thought that poets were already sufficiently accustomed to borrow images and ideas, and to reproduce in their own works whole passages from the ancients. Instruction in the art of plagiarism was in any case confined to orators; and the school was named "L'Académie des Orateurs Philosophiques," with Richesource, its founder, as "director." Richesource declared himself able to make "distinguished writers" of those even who possessed no literary talent; and he has left a work on the subject, in which his method is fully explained. *The Orator's Mask; or, The Manner of Disguising all Sorts of Compositions, Letters, Sermons, &c.*, is its title, and the author explains at the outset that "oratorical plagiarism is the art that some employ with much skill for changing or disguising all sorts of discourses composed by themselves, or due to the pen of another, in such a manner that it becomes impossible for the author to recognise his own work, his own style, or the substance of his work, so adroitly

will the whole have been disguised." The parts of the work which it is proposed to appropriate are to be arranged in a new order, words and phrases are to be replaced by equivalents. "An orator," the reader is told, "has said that an ambassador should possess probity, capacity, and courage. The plagiarist will say that he should possess courage, capacity, and probity." He would be but a poor plagiarist, however, who should chop and change in this manner; and the ingenious plagiarist will, it is explained, replace "probity" by "sincerity," or "virtue," "courage" by "force of soul," and so on. For "ambassador," "envoy" would, no doubt, be substituted; and "should not be without" would probably do duty for "should possess."

Richesource's Academy has long ceased to exist, but his method is still employed, consciously or unconsciously, by numbers of orators in the pulpit and at the bar. It appeared, too, from a case tried in London some twenty years ago, that professed plagiarists are sometimes employed "to destroy copyrights" as the evidence set forth; or, in other words, to treat literary matter which copyright formally protected so as, in the words of Richesource, to render it "impossible for the author to recognize his own work." In the case referred to, the most vulgar kind of plagiarism—the "plagiarism of commerce," it might be called—had been performed upon the substance of a guide-book which had been in a great measure transmuted, but not so thoroughly as to leave no trace of the process. Two words specially sworn to by the author—namely, "savage grandeur" had been taken whole by the plagiarist. A graduate of the "Académie des Orateurs Philosophiques" would probably have converted them into "wild magnificence."

The "art of extemporaneous speaking" taught by certain professors in the present day is probably nothing more than an application of Richesource's method of plagiarism. The story has been told often enough of the funeral oration pronounced in memory of the Duke of Wellington by the present Earl of Beaconsfield. This was a performance which Richesource would doubtless have condemned as inartistic, since neither

the substance nor the style of the borrowed discourse was disguised. But if the "art of extemporaneous speaking" can be taught at all, one of its rules must be that when the speaker has nothing to say of his own he must borrow from some one else.

In the drama plagiarism has been much more freely practised than in any other branch of literature. Managers, in fact, are bound at all hazards to entertain the public, and with that view, like the great manager-dramatist of France, "take their property wherever they find it." The origin of the piece is unimportant, provided the piece itself be suitable. The public, moreover, might be prejudiced against it if they were told that it had not been made expressly for them; and they would certainly listen with mistrust to a comedy which, professing to represent the manners of one country, was known, as first composed, to have depicted those of another. Then there are so many degrees in dramatic plagiarism, from the poet who borrows nothing but an undeveloped subject, or the idea of a subject, to the playwright who re-fashions other men's materials; and from the playwright to the adapter, who perhaps invents a few details, and to the translator who invents nothing, yet, in many cases, does not scruple to claim the work he has translated as his own creation.

The novelist who publishes as his own the work of another man is, unlike the dramatist under similar circumstances, looked upon as having committed a disgraceful action. About the time of the Crimean war it occurred to some foreigner, who had honored England by making this country his home, to publish, as an original story, a translation, or adaptation, of Gogol's *Dead Souls*. To suit the English taste the ingenious adapter had done his best to replace Russian manners by English manners, and had made a point everywhere of substituting English for Russian food. Thus, cold mutton and porter, or ham sandwiches and pale ale, were served to guests arriving on a visit in lieu of caviar and vodka. When this plagiarism on a large scale was exposed in the columns of the *Athenæum*, the publisher expressed his regret at having been made a party to a deception practised on the public,

and the book was withdrawn. No such sacrifice would be made, nor could it in fairness be expected, from a manager enabled to satisfy himself that a work which he had announced as original was in fact a translation, more or less imperfect.

Mr. G. A. Sala has told us in the interesting column which he contributes weekly to the *Illustrated London News* that Paley's *Natural Theology* is freely translated from the Dutch. French bank-notes are, or used to be, adorned with an inscription to the effect that "the forger is punished with twenty years' hard labor." Paley must have felt something like the forger of a French bank-note when he undertook to teach morality by means which, as he was reminded every moment by the very work on which he was engaged, were immoral. In the opening chapters on contrivance and design, the watch which he represents himself as finding on a barren heath, he had, in fact, stolen. So in setting the ten commandments to music, old Haydn, with grim humor, stole a melody for the eighth.

Even Richesource, "disguiser" by profession, would scarcely have given his approbation to a method of "disguising" history invented by Le Père Barre, and practised, it must be hoped, by him alone. Gower, in the *Confessio Amantis*, had long before spoken of Menander as an historian, classing him with Josephus, Esdras, Ephiloquorus, and others; and had described Ulysses as a learned man, to whom Cicero taught rhetoric, Zoroaster magic, Ptolemy astronomy, Plato philosophy, Daniel divination, and Hippocrates medicine. These, however, are but trifling errors compared to the mistakes, or rather the misrepresentations, made by Le Père Barre in his *History of Germany*, of which some two hundred pages are adapted, with the most grotesque results, from the history of Sweden. Le Père Barre wished above all things to divert the reader; and as Voltaire's *History of Charles XII.* was much more entertaining than anything he could write, he embodied it, with some indispensable changes of name, in his *History of Germany*. He applied to the Emperor Rudolph Voltaire's remarks on King Stanislaus, and made Valdemar, King of Denmark, say and do precisely the same

things as Charles XII. at Bender. This again would not have suited Professor Richesource, who limited his system of plagiarism to "philosophical oratory," and, for the most part, to the enunciation of abstract principles—the property, he seems to have held, of anyone who liked to take the trouble to utter them.

In connection with bookmaking meant to amuse, specimens of bookmaking intended to mislead might be cited. Of these the most notorious perhaps is that *History of France* published under the Restoration, by Le Père Loriquet, with the initials of the Jesuits' motto *Ad maiorem Dei gloriam* as epigraph. The edition, however, of the work in which Napoleon Bonaparte is said to figure as a certain "Marquis de Bonaparte, who gained important victories at the head of the King's armies" is not to be found; and the late M. de Montalembert denied that it had ever existed. Scarcely less valuable than a copy of the missing edition of Le Père Loriquet's *History* would be that number of *Le Journal des Débats*, belonging to the same period, in which the following statement is said to be contained. "Bonaparte was never christened Napoleon. His true name was Nicholas. But this man wished that everything connected with his person should be extraordinary."

A very remarkable class of book-makers are translators who will not be satisfied with merely translating. Voltaire said of translators that they were like servants who thought the masters they had the honor of waiting upon were the greatest persons in the world. Some servants, however, and some translators, think themselves quite as good as their masters. In a French version of Plautus, published in 1719, the playful translator, M. de Geudeville, declares towards the end of his preface that he has spared no pains "*pour mettre ce vieux comique à la mode.*" "I have followed my own inclination," he adds, "and I am convinced that true men of taste, a select band, will be much obliged to me for having endeavored to divert them all the more." Auteroche, author of a rhymed translation of Virgil's *Æneid*, has altered scenes, characters, and motives. He does not, however, on that account consider himself Virgil's superior. On the contrary, he tells the reader that he feels

sure Virgil would have done the same "if he had only had time."

It was reserved for a distinguished Russian nobleman, Count Orloff, to discover the means of acquiring a certain literary reputation without writing a line. He employed a number of French writers, many of them men of considerable distinction, to compose, under his direction, a history of Italian music. The Count did not claim to be more than the originator of the work; but his name appeared in large letters on the title-page. To the same patron of letters belongs the undeniable merit of having first made known to the West of Europe the admirable fables of Kriloff. A number of the song-writers and minor poets of the Restoration were engaged to put into French verse prose translations of the Russian fabulist's most important productions. Besides being well paid, these gentlemen are said to have been sumptuously entertained at the Count's table; and the work, when finished, was announced as having been executed under the Count's "presidency." In spite of Count Orloff's liberality and care, the enterprise did not turn out so well as might have been expected. Each of the poets (among whom Désaugiers, the famous *chansonnier*, and Rouget de Lisle, the author of the *Marseillaise*, may be mentioned) wished to show himself a second La Fontaine, and, introducing much matter of his own, destroyed the character of the original. One, moreover, in reproducing the *Elephant*, mistook a satire on triviality in criticism for a eulogium on the worship of the infinitely small.

A curious list of translators' mistakes, or mistakes made in translation, might be made out. Thus the Abbé Viel, writing of Canterbury, and misled by the word "canon," stated that the cathedral was surrounded by artillery. The prime minister of all England was apparently in his eyes a military ecclesiastic, like the ancient Vladika of Montenegro. Guizot, in his *Life and Times of Shakespeare*, has—writing in English—expressed a hope that Shakespeare might be more and more "translated" for the benefit of the French. Authors' mistakes, however, belong only indirectly to the subject of bookmaking; nor is it always wise to point them out. Indeed—as a famous

"printer's reader" once remarked in a poem on the subject of his own occupation, called *Corrector Typographicus*—to the man who corrects the errors of another (and who ever thinks of correcting his own?)

"Plus satis" invidiæ gloria nulla manet."

Indignation was created a few months ago in a great part of England and Scotland by an inquiry made in this magazine as to where Mr. Black found Beethoven's *Farewell*, or rather by a statement that no such piece existed. "Did the writer," it was asked, "never hear of the sonata called *Les Adieux, l'Absence, et le Retour*, and if so, had he not sense enough to know that Mr. Black must have been thinking of the first movement in that work?" Mr. Black's enraged partisans do not seem to perceive that it is only when heroines thoroughly charming and life-like sit down to the piano, that one cares to know what it is they are playing. Young ladies of an inferior stamp might confound Beethoven's *Adieux* (a piece which would have sorely taxed the powers of the simple Miss Wenna) with *Beethoven's Farewell to the Piano* (an impudent and worthless forgery which is still current), or the Funeral March of the Sonata in A flat with the Funeral March of the Heroic Symphony, and no one would give a second thought to the matter.

Erroneous opinions cannot always be described as mistaken; though that young man may fairly be said to have committed a blunder who, having stated before a board of examiners that Charlemagne lived 800 years before Christ, and being asked whether he did not mean "after Christ," persisted in his original statement: adding, "I am sorry to disagree with you, but that is my opinion." Many authors cause a certain amount of confusion to their admirers by changing their opinions—their opinions properly so-called. Numbers of writers have begun as Revolutionists to end as Conservatives. Victor Hugo, however, who for the last twenty-eight years has been an ardent Republican, gained his first reputation as a Legitimist.

Apart from errors made by themselves, a good many authors have been the causes of errors, sometimes very droll ones, made by others. Guarini's *Pastor*

Fido has been included in a catalogue of religious books; we have the authority of Mr. Hill Burton for stating that Mr. Ruskin's *Notes on the Construction of Sheepfolds* were much asked for among the muirland farmers, and that great disappointment was caused by their discovery of the real nature of the work; Miss Edgeworth has herself told how her *Essay on Irish Bulls* was ordered by an Agricultural Association; Mr. Swinburne's *Under the Microscope* was classed by German publishers as a scientific work; and Henri Murger's *Scènes de la Vie de Bohème* is reported to have had a corner given to it by Herr Von Sybel in his *Historische Monatsschrift*.

Probably index-makers have shown themselves quite as ingenious in misapprehending their authors' intentions as catalogue-makers themselves. The compiler of some Annual Record is said to have been much annoyed at finding that in his index, which he had entrusted to other hands, no reference was made to Parliamentary proceedings. So at least it seemed until at last under the head of "Public Meetings," he discovered "Meeting of Parliament." A very industrious index-maker, who let nothing escape him except now and then the main subject of the sentence he was dealing with, made in his index the following entry:—"Greatness of Mind, instance of." This corresponded with a passage in the body of the work which related how a certain judge had declared that he had "a great mind to send the accused to prison without the option of a fine."

Errors arising from hasty and inconsiderate cutting down are to be met with, not in books (for an author always cuts himself down with remarkable tenderness), but in carelessly edited newspapers. A barrister of my acquaintance was much irritated at seeing it stated one morning in a London journal that he had defended a certain person, "who was accordingly convicted." The chief causes of the man's conviction—apart from the manner in which his counsel might have defended him—were not given. In connection with eccentric journalism a story is told of a reporter—in the days when descriptive reporting had not yet been invented—who, being instructed to report an eclipse of the

sun, and finding that no speeches were delivered on the occasion, wrote, in stereotyped phrase, that "the proceedings were entirely without public interest." A certain admiration must be felt for that inexperienced reporter who, being sent to the Divorce Court, caused much dissatisfaction in the office by merely writing the plain truth, that "the evidence was unfit for publication."

The errors in which so many books abound, and from which none, it is believed, are absolutely free, are due for the most part not to the writers of the books, but to the printers and to those literary officials of the printing-office called in France "correctors," but in England simply "readers." Not that there is any proportion between the mistakes which the "reader," in some hopeless endeavor to extract light from darkness, is liable to commit, and the mistakes made by the compositors, or by the author himself, which he is constantly setting right. But the "reader" is considered responsible not only for the blunders which he originates, but also for the blunders, at least those of a typographical kind, which he fails to correct. His duties thus are arduous, and can only indeed be adequately performed by a man of considerable learning and ingenuity. Every profession should have its ideal; and the ideal of the printer's reader is well set forth in the following passage from a letter addressed to the French Academy by the "Société des Correcteurs des Imprimeries de Paris." "The functions of the corrector," says the letter, "are very complicated. To reproduce faithfully the manuscript of the writer, often disfigured in the first proof; to bring into conformity with the orthography of the Academy the manner of writing peculiar to each author; to give clearness to the composition by the use of a sober and logical system of punctuation; to rectify erroneous facts, inexact dates, false quotations; to see that the rules of art are scrupulously observed; to perform, for hours together, the double operation of reading by the intelligence and reading by the eye on the most difficult subjects, and always on a new text, in which each word may hide a snare, since the author, carried away by his thought, has read not what has been, but what ought to

have been, printed: such are the principal duties of a profession which writers have at all times regarded as the most important of those connected with the typographical art."

Admirably written! But where was the "correcteur" when, in a certain French Prayer-book, "Ici le prêtre ôte sa calotte" was replaced by "Ici le prêtre ôte sa culotte?" or when M. Guizot, who in the chamber had exclaimed, "Je suis à bout de mes forces," was declared to have said, "Je suis à bout de mes farces?" or when a certain envoy was represented as having been "dévoté" when he had in fact only been "décoré," by the Bey of Tunis? There was intention, no doubt, in the apparent misprint by which M. de Caulaincourt, accused of complicity in the murder of the Duke d'Enghien, was called in the *Moniteur*, not Duc de Vicence, which he had just been created, but "Duc de Vincennes;" and the Spirit of Poetry would seem to have presided at the making of the famous mistake in Malherbe's verses, by which

"Rosette a vécu ce que vivent les roses,
L'espace d'un printemps,"

became, through the poet's having omitted to cross his t's,

"Rose elle a vécu ce que vivent les roses,"
&c.

Where, again, was the "reader" when, in Alison's *History of Europe*, the printers were allowed to state that among the pall-bearers at the funeral of a great naval hero was "Sir Peregrine Pickle"? or when, in a work on *Gems and Precious Stones*, the quotation from the *Merchant of Venice*, "I had it of Leah when I was a bachelor," was turned into "I had it of Keats," &c. Or, once more, where was he when in a work by the lively Comtesse Dash, the concluding sentence and point of the whole—"pour bien connaître l'amour il faut sortir de soi," was allowed to appear as "sortir de soir"?

Printers will always manage to construct a grammatical sentence out of any assemblage of words entrusted to them. Unless the manuscript be absolutely and totally illegible, they will, in their own phrase, "make sense" out of it; though this so-called "sense" may be absolute nonsense, or, without being nonsense, something very different from what the author intended. It would seem that in

some printing-offices the readers are so intelligent and so perfectly reasonable that they will tolerate nothing fantastic on the part of their authors. A poet is frequently seized in his flight and brought down to earth by his translator; and Mickiewicz used to say of one of his countrymen who had reduced him into French prose, that "God had sent him as a humiliation." Printers, too, will sometimes vex the poet's soul by "making sense" out of his most delicate imaginings. What must have been Mr. Tennyson's feelings on seeing, in the latest edition of his works, the line

"And followed by a hundred airy does,"*

turned into

"And followed by a hundred hairy does."

On the whole, however, printers' "readers" render invaluable services to authors of all kinds; and it should not be forgotten that of the errors laid to their charge many are the work of the authors themselves or of their transcribers. In a volume by a lady whose writings have doubtless given a considerable amount of pleasure, the involuntary act or process which Johnson would have denominated "sternutation" is printed "stercoration." A French *correcteur* would have been bound to look for this portentous word in the Dictionary of the Academy—where he would not have found it. The English "reader" ought not to have passed it. But no "reader" can be supposed to have invented it.

Johnson in the definitions of his Dictionary is known to have allowed himself a certain latitude in the way of pleasantry. But it is scarcely probable that under the head of "sit" he gives this pretended quotation in illustration of one of the meanings of the word:—"Asses are ye that sit in judgment." The reference is to Judges v. 10, where we read, "Speak ye that ride on white asses, ye that sit in judgment." The transcriber seems to have copied out only the last six words

of the passage, and the printer to have inserted "are" in order to "make sense."

Translators, considered as "traducers," have already been spoken of. But in connection with this subject a remarkable error, as illustrating the dangers of carelessness in combination with a good dose of stupidity, may be cited from the notes to Bohn's edition of Gibbon's *Decline and Fall of the Roman Empire*, vol. vi. p. 472. Gibbon's text runs: "Bohemond's embarkation was clandestine, and, if we may credit a tale of the Princess Anna, he passed the hostile sea closely secured in a coffin." To this Gibbon gives a note: "Anna Comnena adds that, to complete the imitation, he was shut up with a dead cock; and condescends to wonder how the barbarian could endure the confinement and putrefaction;" to which Bohn's editor adds: "In M. Guizot's edition the translator, having mistaken the original English word, rendered it by *cuisinier*, and embellished the tale by shutting Bohemond up with the corpse of a *cook* instead of a *cock*. So it is that errors in history are perpetuated."

The mistakes of translators are more dangerous, and they are also less amusing than misprints; while in the matter of misprints the drollest typographical errors, however, are those which compositors make, but which readers correct, so that they never meet the public eye at all. A great writer of our time, among whose merits that of a clear handwriting is not conspicuous, in describing the Mount of Olives and his own brilliant discovery of the precise road taken by the Saviour on His triumphal entry into the Holy City, had abbreviated the word "Jerusalem" into "Jerus." But this hardly justified the compositor in presenting the sentence with this striking variation: "On reaching this rock we were at once unexpectedly greeted by a most magnificent view of Jones."—*Macmillan's Magazine*.

ISLAM.

BY L. MASON.

WHAT we call Mohammedanism is one of the most extraordinary phenomena in

history. When we speak of religion, or at least of religions, we are too apt to confine our thoughts to the different sects of the Christian religion, as we are acquainted

* *The Princess*, canto vi. line 71.

with them, more or less, in Europe and America. We think of the Greek communion, the Roman communion, the Anglican communion, and of the very numerous bodies whom those of the "established" religion, in every country where an establishment exists, call sectaries, or heretics.

But what are the facts? We know them well enough when we are in our best wits, but they are far indeed from being habitually present to our minds. Of Buddhism we know little, much as has been written about it; but there is in the world much nearer 500 millions than 400 millions of Buddhists. Of pagans, or heathens of low type, there is going on for 200 millions. Of Brahmins and Parsees there is about 120 millions. Of so-called Christians about 350 millions. While of Mohammedans there is about 130 millions, and the number is constantly increasing in Africa and the East. It is far better, humanly speaking, to be a Mohammedan than a Fetichist or Polytheist; but when we call to mind the extent to which the religion of the False Prophet of Mecca—for false he was—wiped out Christianity from the face of the earth, and went on to occupy ground which Christianity might reasonably have been expected to fertilize with loftier and purer views of God, human duty, and a future life; when we note the rapid strides that the creed of Islam is making, in Africa for example, where Christianity in vain tries to obtain a hearing; and, lastly, when we think of the amazing durability of the creed among the races which have ever received it, and the truly awful way in which it seems to ossify in its converts some of the very worst (while undoubtedly vivifying some of the best) qualities of human nature,—when we have these and kindred topics vividly present to our minds, we cannot but stand dumb in the presence of the solemn problems which are at once suggested to us.

It seems such an awful, such an inexplicable, thing, that a bad and false faith should be allowed so wide a range,—breaking upon the world so quickly as it did after the opening of the Christian era, and then going on conquering and to conquer,—that some good and able men, some who even profess the Christian faith, have been driven into paradox in

speaking or writing of Mohammedanism. Mr. Carlyle is of course not a professor of Christianity, and to him is largely due (in this country) the change which has come over our recent literature as to Mohammed and Mohammedanism. It is very seldom that we now see such writing about the False Prophet as we find in Gibbon, Ockley, and Hallam. There is a tendency to throw a mist of glorification around the man and his teaching; or a tendency (sometimes the two things unite) to treat the whole question from the "scientific" point of view, and regard Mohammedanism with something more than toleration, as the faith best adapted to certain "types of humanity."

Considerable interest has lately been excited by a book, by Mr. R. Bosworth Smith, M.A., Assistant Master in Harrow School, late Fellow of Trinity College, Oxford. The book is entitled, "Mohammed and Mohammedanism," and consists mainly of lectures delivered at the Royal Institution in 1874. Mr. Smith takes by far the highest view of the career and character of Mohammed that any writer of ability has yet put forward, and says he sees no prospect of a conquest of Islam by the Christian faith. He cannot hide—does not try to hide—the faults and crimes of Mohammed; but he apparently regards him as a prophet with a special Divine mission, like Moses,—a mission adapted to the religious and moral needs of certain races. A small portion of his language on these subjects we will quote:—

"Can it be forgotten that the Churches planted by the great Apostle were, without exception, to the west of Palestine,—that star-worship and fire-worship were unaffected by Christianity then, even as Brahminism and Buddhism are unaffected by it now? Can we point to a single Oriental nation which has been able to accept and to retain Christianity in its pure form, or a single religion to be named with Mohammedanism in point of purity and sublimity, which has ever been able to overthrow any Oriental faith?

"The triumphs of the cross have indeed been far purer, far wider, far sublimer than those of the crescent; but they have been hitherto confined to the higher races of the world.

"Mohammedanism can still renew its youth, and it is possible that the present generation, in face of the advance of semi-barbarous and intolerant Russia, may see a revival of the old crusading spirit,—an outburst of stern fanaticism, which, armed with the courage of despair, obliterating, as in the Circassian war, even the immemorial schism of Sonnee and Sheeah, may hurl once more the united strength of the crescent upon the vanguard of advancing Christendom. It is a prospect formidable to every Christian—formidable, above all, to those who for good or for evil rule thirty millions of Mussulmans in India; but I cannot think, even if the result were to be that a stop should be put to all further conquests of Europeans in the East, that the world would be altogether a loser thereby. In the East a revived Islam contains more elements of hope for the future than a corrupt Christianity, which in Asia has rarely been otherwise than dead."

Certainly this view of the subject has a special interest at the present moment, and we must draw a line of distinction between Islam and Turkey. The Ottoman race has always been, as Mr. Gladstone calls it, "anti-human;" but there have been many pages in the book of history in which Mohammedans have shown themselves superior to Christians, even in some of the Christian virtues. Saladin, unless history deceives us, was morally superior to our Richard Cœur de Lion, and the debt of Europe to the Arab is great indeed. If chivalry did not come from Arabia, our obligations in art and science to the Arab are immense,—we may add even in speculative theology and metaphysics. But whether Mohammedanism can ever *better* any but a very inferior race is another question. And if we find that it makes men into unalterable fanatics, and gives them, when certain occasions arise, excuses, if not motives, for the worst forms of lust and ferocity, we cannot look upon it as other than one of the most awful phenomena in the whole story of the human race. As such a phenomenon I confess I do myself regard it.

Mr. Carlyle's "wild and whirling words" about Mahomet and other "heroes" are well known, and from them we will only take a very brief passage.

It will be seen that Mr. Carlyle gives higher figures than we have done for the Mohammedan population of the world:—

"The word this man spoke has been the life-guidance now of one-hundred-and-eighty-millions of men these twelve hundred years. These hundred-and-eighty-millions were made by God as well as we. A greater number of God's creatures believe in Mahomet's word, at this hour, than in any other word whatever. Are we to suppose that it was a miserable piece of spiritual legerdemain, this which so many creatures of the Almighty have lived by and died by? I, for my part, cannot harbor any such supposition. I will believe most things sooner than that. One would be entirely at a loss what to think of this world at all, if quackery so grew and were sanctioned here. . . .

"A false man found a religion? Why a false man cannot build a brick house! If he do not know and follow *truly* the properties of mortar, burnt clay, and what else he works in, it is no house that he makes, but a rubbish-heap. It will not stand for twelve centuries, to lodge a hundred-and-eighty millions; it will fall straightway."

I confess this seems to me very poor stuff indeed. The man who wishes to believe in the Divine government must face worse problems than that of a religion founded on imposture; or it will go hard with his faith. How many millions of human beings have been for thousands of years fetish worshippers and cannibals of the lowest type? The Buddhists are more numerous than the Christians, and yet, since it is to this day uncertain whether there ever was a Buddha, we are clearly not in a condition to discuss the question of Buddha's sincerity.

The argument about the building of a house is a paralogism of the grossest and most obvious kind. Mr. Carlyle has here juggled with the word "true." A perfect scoundrel might build an admirable brick house, so long as he conformed to the laws of gravity and the other laws concerned. Is there any proof that an impostor could not found a religion by conforming himself to certain very familiar laws in the management of men? In our own day we have seen the astounding phenomenon

of Mormonism. And Joe Smith was not only a scoundrel; he was, in all respects but knowledge of the way in which men and women are most easily to be humbugged and led, an ass,—an ignorant brutish lout. Now, if all this can take place in the full daylight of the age of printing how can we presume to guess what might have taken place in the first centuries of the Christian era?

But it is not necessary to maintain either that Mohammed was an impostor pure and simple, or that his religion is all falsehood. How can *any* religion be all falsehood? It is an impossibility. The very essence of the thing is the assumption of *some* truth to which the human heart responds. But it is perfectly conceivable that a nucleus of religious truth may be so imbedded in bad fancies, bad rules of conduct, bad

motives of action, with ambiguous matter of various kinds, that the total result may be one of the worst curses that were ever permitted to flourish on the face of the earth.

As to Mohammed himself, I hold that no dispassionate and open-eyed reader of his life and of the whole story of his career as a prophet can doubt that he was part honest fanatic, part madman, and in part a semi-savage and self-indulgent scoundrel. The type is common. I could lay my finger on half a dozen of it within a mile of my desk, barring the savagery. And I sadly fear that in one or two of these cases the savage strata lie very thick under a thin alluvium of civilisation. Add great energy, ability, and imagination to this very, very common type, and you may have a Mohammed.—*Evening Hours.*

THE PLANET SATURN'S DARK RING.

BY RICHARD A. PROCTOR, B.A., F.R.S.

SATURN is now the ruling planet of the night, and will continue to be so for several weeks. It may, therefore, interest our readers to learn that some very striking observations have recently been made upon the ringed planet, at an observatory which in former years acquired great renown for Saturnian discoveries. At Harvard, Cambridge, Mass., there is a fine telescope by Merz (the maker of the object-glass of the great Greenwich telescope), which, unlike its brother at Greenwich, has been employed in the study of the sun, moon, and planets, with results scarcely matched and certainly not surpassed elsewhere. It was with this instrument that the elder Bond detected the satellite Hyperion, the last discovered of the eight moons of Saturn, and remarkable as travelling between the two largest moons, Titan and Japetus. The honor of this discovery had to be shared, however, with our observer, Mr. Lassell, who detected the moon while the news of Bond's success was on its way across the Atlantic. Another discovery made by Bond was also, by a strange coincidence, independently, but later, effected by an Englishman, during the interval between the discovery in America and the arrival of the news of

it in England. He perceived inside the bright rings of Saturn, which had been known for nearly two centuries to astronomers, a dark ring, possessing the strange property, hitherto unheard of among celestial objects, of being transparent, so that where it crosses the disc of the planet the latter can be perceived through it as through a crape veil, to use Mr. Lassell's description. This strange appendage was discovered by Dawes a few days later in England. It is to this object that the discoveries we have now to describe relate. From the time of its detection the dark ring has been the subject, or, perhaps, we should rather say, the occasion of much speculation. It was not supposed to be an entirely new formation, though so clearly discernible when first noted that many wondered how it could so long have remained unnoticed when the planet was studied with the powerful instruments known to have been used in its examination. Pictures of the planet were found which seemed to show that the "crape veil" at least had been seen many years before Bond detected it. It does not say much for the earlier observers that they should have paid so little attention to a feature so strange, or for astrono-

mers generally, that having the opportunity of examining the earlier drawings, they should have overlooked the peculiarity. So, however, it was. But though the newly observed ring was not regarded as an entirely new formation, it was seen to be highly probable that this ring had developed marvellously, for when first recognised as a ring it was quite a well-defined feature of the planet. The idea was suggested that the ring system of Saturn had drawn inwards, and some even went so far as to compare the new inner dark ring to the front waves of an ocean bearing inwards upon the planet. In England the discovery led the Cambridge Professors of Mathematics to select the rings of Saturn for the subject of the Adams Prize Essay in 1857. Professor Clerk Maxwell, to whom the prize was awarded, deduced from the mathematical investigation of the subject the strange conclusion that the rings are formed of multitudes of minute satellites, as sands on the sea-shore for multitude. Thus the dark ring would come to be regarded as simply a portion of this mighty belt of small satellites, where the moons were widely scattered, so that the dark background of the sky could be seen through the ring.

The observations recently made by Mr. Trouvelot at Harvard accord perfectly with this theory, and seem explicable by no other. It has been noticed, in the first place, the planet's shadow where it falls on the dark ring undergoes strange changes of shape, as though the surface on which it fell were undulating. Now, although there might be irregularities on a solid ring, and though these, by changing their position as the ring rotated, might produce the effects described, we have no reason whatever for supposing that there are fixed unevennesses upon Saturn's rings large enough to be discernible from our distant stand-point. It is much more natural to suppose that the scattered moons forming the dark ring have such motions as to give an undulating surface to the rings. There is, indeed, another explanation, which probably is also true, viz., that the planet's atmosphere is very deep, and laden with enormous masses of cloud, which are continually changing in position, shape, and constitution, now floating high, now low; now swelling, now contracting;

now dissolving into invisible vapor, anon condensing into masses as dense as our heaviest rain-clouds. The shadow of a planet surrounded by such vapor-masses would unquestionably vary, and we know that even on the bright rings the shadow of Saturn varies; but as it is seen to vary more markedly on the dark ring, we may infer that this ring has an undulating surface.

Next, Mr. Trouvelot has noticed that the inner half of the dark ring is so transparent that the outline can hardly be recognised where it crosses the planet, whereas the outer half is so much more opaque that the outline of the planet can hardly be seen through it. This fact is not only remarkable in itself, but still more remarkable when we remember that until quite recently the character of the dark ring was quite different. The whole width of the ring was formerly uniformly transparent, or at least so nearly so that no difference could be recognised between the outer and inner parts of this ring. This thinning of the inner edge is probably accompanied by a gradual extension of the ring-system towards the planet. Clerk Maxwell long since pointed out that a change of this sort was to be expected, as a natural consequence of collisions taking place among the tiny moons forming this ring-system. And other observations by Mr. Trouvelot show clearly that multiplied collisions of this sort must continually occur. For he finds that from time to time the dark ring assumes an aspect showing that its substance is agglomerated in clustering masses, through which the light of the planet does not penetrate. How strange are the thoughts suggested by such changes! Within the ring itself what energy of life (so to speak) is indicated by the conflict of satellites! And as regards Saturn himself, does it not appear clear that while such changes as these are taking place in the nearer portions of his system, he cannot yet be regarded as a completed world? We see nature's hand still at work out yonder, fashioning under the very eyes of astronomers the system of a planet once thought to have been formed even earlier than our own earth. The processes of cosmical development which were formerly so energetically disbelieved, but

have now taken their place among astronomical probabilities (and almost as certainties), seem here to be actually in progress. Nature has been detected in the act, and there is good reason for believing now, what was suggested by the present writer eleven years since, that

"in the variations perceptibly proceeding in the Saturnian Ring-system a key may one day be found to the law of development under which the Solar system reached its present condition."—*The Spectator*.

AN AMERICAN CO-OPERATIVE COMMUNITY.

ABOUT two years ago, the Black River, rising one night without warning, swept away a toy factory at Springfield, Vermont, U.S., managed by a Mr. Ellis, who had invested the bulk of his savings in the concern, and found himself suddenly a poor man again. He had long believed that working-people could profitably become their own employers, and determined to risk the little the cruel waters had left him in giving practical proof of his faith in co-operation. Four good workmen, who had saved a few dollars, were found willing to make the experiment, and 'the Practical Co-operation Association' was formed; its avowed objects being, to provide each member with constant employment at remunerative wages, find him with wholesome victuals and a comfortable home at the lowest possible cost, and insure him a competency when his working days were over.

With a joint capital of a thousand dollars, the five 'industrials,' as they soon came to be called, commenced business as manufacturers of toys and fancy articles in a small workshop commanding water-power. They had no difficulty, thanks to Mr. Ellis's experience, in finding a profitable market for their wares; and when it was seen that they could hold their own, plenty of men were ready to join the Association, and as every new-comer had to bring a hundred dollars with him, it was not long before the society owned its shop and another beside. Everything went on well with them until the spring of 1875, when the damage done by a fire frightened not a few of the associates into secession. The majority, however, 'stuck to the ship,' turned builders for the nonce, and at the end of a couple of months were busy at their accustomed work again; and they have gone on prospering ever since.

Upon making this second start the rules of the Association were revised. By the code now in force a candidate for admission into the community must be sound in body, blameless in character, a non-smoker, an abstainer from intoxicating drinks, and the possessor of three hundred dollars, which he pays into the general fund upon entering the society. When he has done this he is only a member on probation, liable at the expiration of his three months' term of trial to be voted out of the Association, if his co-workers so will; so that the industrials are not likely to be saddled with bad workmen or disagreeable companions. The affairs of the community are managed by five directors, chosen by ballot, who appoint a president, a secretary, a superintendent, and select those they deem best fitted to act as foremen of the shops. A member on probation receives a wage slightly in excess of the cost of his keep; but as soon as he is elected into the society, he is paid according to his ability; the rate varying between seven and a half and sixteen and a half dollars a week, the last-named amount being exceeded in special cases. What is done when a worker is incapacitated by illness we cannot say, information being wanting on that point. Wages are paid once a quarter. Not in full, however; four and a half dollars a week being deducted for board and lodging, and one-fourth of the worker's earnings being retained for investment in the Association's capital fund. Thus, a man earning fifteen dollars a week will at the end of three months receive eighty-eight dollars in cash, and have forty-eight dollars added to his capital; so that every member is compelled to save money and increase his monetary interest in the business. He cannot draw any money out of the fund, even the interest due to him being added to his capital, until it

pleases him to withdraw from the community, when he—or in case of his death his representative—receives the whole of the money standing at his credit in the Association's books. What with the quarterly additions and the high compound interest, a member who holds on to the P.C.A. for ten years will find his original investment swelled to a very respectable sum. Boys and women are put on the same footing as men, save that the former need only bring in one hundred, instead of three hundred dollars to the common fund; while the latter are let off yet easier with a contribution of twenty-five dollars, which they are allowed to pay by instalments out of their earnings, and are only charged three dollars a week for their board and lodging.

Business meetings are held at regular intervals to consider the directors' reports and statements of accounts, and to fix the rate at which each worker is to be paid for the ensuing period; it being the strict rule of the Association that the interest upon the invested capital—which is fixed at eight per cent.—must be first secured; and if the dullness of trade threatens a falling-off in the receipts, the difficulty is met by reducing the wages until things recover themselves.

Every member is expected to be in his or her place when the machinery is started at seven in the morning; any one making an imperfect day being mulcted ten per cent. on the day's earnings. At twelve all adjourn to the home, where a good dinner is provided, and return to the shops at one and work until six. The Practical Co-operation Association does not recognise the Saturday half-holiday or any other holiday except the statutory ones. The American journalist to whom we owe our knowledge of the existence of this interesting community, visited their workshops one dreary afternoon when the rain was descending like a deluge. 'No one was to be seen outside the shops. Inside, however, little heed was paid to the weather. The noise was deafening, and every one was working with a vigor and earnestness that would have amazed me had I not known that each member was laboring with the knowledge that his or her industry was increasing the resources of

the community, and thereby adding to the wealth of each individual worker. Men and women were employed together—the men doing the rougher work at the machinery, while the women had lighter and easier labor. There was little or no conversation going on; the entire faculties of every one within the walls of the shops seeming to be engrossed, to the exclusion of everything else, in the manufacture of American flags of various sizes, intended to enable the patriotic youth of the Republic to becomingly celebrate the centennial fourth of July. The wheels flew round and round, as if they too shared the general spirit of industry and were actuated by a sense of personal responsibility. Sheets of muslin went in at one end of the presses white and glazed, and came out at the other damp with the freshly painted stars and stripes. As rapidly as nimble hands could seize them they were hung up to dry, after which the women pasted or nailed them to sticks, which were being manufactured in another room. The superintendent told me that the members had been employed in this manner for the past two months, during which period they have made and shipped not less than three-quarters of a million flags. In April they shipped about four thousand seven hundred dollars' worth; increased their capital by fifteen hundred dollars, and their joint wages amounted to eighteen hundred and twenty-three dollars.'

One good feature usually distinguishes the operative classes in the United States. After the hours of daily labor, they go home, shift their attire, and put on a dress resembling that of other members of the general community. In other words, they do not appear as loungers in the streets, unwashed, and in their working garments, as is too commonly the case in English manufacturing towns. Among the co-operators we are speaking of, there is visibly a high sense of self-respect. When the day's work is over they hurry to the boarding-house, to change their working-clothes for smarter attire ere they sit down together to an early supper; and supper discussed, set about amusing themselves according to their several fancies. Some go for a walk, some for a row in a boat, some try their skill at football and other

outdoor games, while the stay-at-homes settle down to their letters or their books, or gather round the piano for a little music. As the evening closes in, the family gather together to indulge in candy-pulling—that is, drawing out great masses of molasses candy until it becomes too stiff to be pulled any longer. Then the dining-room is cleared for a game at forfeits; the penalties attached to the redemption sometimes affording amusement. At ten all retire for the night, and conscious of a well-spent day.

This curious industrial Association counts fifty-five members, ranging in age from sixteen to thirty, the sexes being pretty equally represented. The majority of the male recruits are steady workmen tired of enforced idleness, and the consequent melting away of their savings. Most of the women have been lured from the harassing, underpaid work of teaching by the prospect of being able to lay by something for the future while earning a present livelihood. They are

said to be well endowed in the way of good looks, which may be accounted for by their admission into the community depending upon the votes of male co-operators; although it must be owned that the latter have not shewn themselves over-susceptible to feminine charms, for only two marriages have taken place among the members since the Association was founded.

So far the Association has prospered. It has fulfilled its promise of providing constant and remunerative employment and a comfortable home for all belonging to it; whether it will last long enough to insure them a retiring competency, time only can tell. A trade-union that recognises the claims of capital; insists upon every worker working his best and being paid according to his ability; discountenances the idler, the shuffler, and the thriftless, and inculcates self-denial, is such a novelty in these days, that we cannot but wish it every possible success.—*Chambers's Journal*.

THE WAITING ANGEL.

The painter who should drop his brush
Because he could not seize the blush
Of heaven, when birds do dreamily stir
And the warm sun first touches her,
Would not be worthy of his name.
He cannot copy the morning-flame,
But with his best of artist-wit
Lovingly strives to render it,—
And heaven, in our ideal sense,
For him and us makes recompense.

The poet who should break his lyre
Because he could not make the wire
Echo the music of the spheres
In perfect tones to mortal ears,
Translate all utterance of the gods
In the rude phrase of mortal clods,
Fling from its delicate frame of gold
The thunder, awful as it roll'd,—
No bard were he! He sings his best,—
Celestial law provides the rest.

The man who will not gird his loins
For that which truth or love enjoins,
Because he knows his work when wrought
Will fall below his hope and thought,
Is no true workman. Let him do
The thing his conscience points him to,
And he shall find the seed he cast
Spring up when many days are past;

Whilst every honest deed will bring
 A training for that nobler thing
 For which archangel duly waits,
 Keeping Occasion's golden gates
 For such as watchfully pursue
 Her long laborious avenue;—
 Many she calls, but chooseth few,
 To crown at last when crowns are due.

Evening Hours.

GENERAL JOSEPH R. HAWLEY.

BY THE EDITOR.

THE universal interest felt in our Centennial Exposition at Philadelphia—an interest which has now become a proud reminiscence—will probably render peculiarly acceptable the portrait of General Joseph R. Hawley, which embellishes this number of the *ECLECTIC*. As President of the Centennial Commission, Gen. Hawley was prominently associated with the great international enterprise from the start; and it is understood to be largely owing to his rare executive skill and faculty of organization that the Exposition, in all the details of practical management, was so unprecedentedly and wonderfully successful. It can not be denied that at the initiation of the scheme much apprehension was felt lest it should degenerate into a mere cloak for political and commercial jobbery; and for the guarantee of good faith which his selec-

tion as head of the Commission furnished, and for the manner in which he has vindicated the confidence which his selection inspired, General Hawley is deserving of the grateful recognition of his countrymen.

General Hawley's name has not yet found its way into the cyclopædias, and as our efforts to obtain the information from other sources have failed, we can give but few details of his life. He is a native of Connecticut; comes from a family which has furnished several distinguished members to the ministry; was educated at Yale College; served with distinction in the army during the late war; and has been twice elected to Congress. His labors as chairman of the Centennial Commission have been unremitting, and the results have fully justified them.

LITERARY NOTICES.

THE FIVE SENSES OF MAN. By Julius Bernstein, Professor of Physiology in the University of Halle. International Scientific Series. New York: *D. Appleton & Co.*

THIS is the twenty-first volume of the "International Scientific Series," which is more than fulfilling the high hopes entertained for it from the start. Already it requires a shelf for itself in the library; and the attentive reader of it may not only feel that he is abreast of the great currents of scientific thought, but that the knowledge thus acquired is absolutely authentic and reliable. The great merit of the series, indeed, is that it offers the reader no second-hand information, but brings him face to face with men who have acquired the right to speak as authorities; and though for lack of literary skill in some instances the path of the beginner is now and then rendered harder

than need be, yet the importance of the goal more than compensates for the difficulty of reaching it.

The obstacles which beset a thoroughly trained scientific man when he attempts to impart his knowledge to the non-scientific reader are well exemplified in Professor Bernstein's "Five Senses of Man." The work is admirably comprehensive, and the greater part of its expositions are remarkably lucid and intelligible; but the author can not persuade himself to abstain from directing attention to a point merely because its explanation is difficult, and the reader occasionally finds himself confronted with statements and arguments and inferences which imply a larger acquaintance with physiological laws and the processes of scientific induction than he is apt to possess. Prof. Bernstein frankly acknowledges in his preface, however, that he has "endeavored at



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GEN. J. M. HAWLEY.
(PRESIDENT CENTENNIAL COMMISSION)

times to take the reader a step beyond the domain of the ordinary popular treatises," and, as we have already said, the value of the information thus conveyed amply rewards the thought and study necessary to master it. Especially striking is the elaborate and detailed description of the structure of the eye, and of the method of its operation, and after perusing it the reader will not be surprised that even John Stuart Mill was compelled to confess that the structure and adaptations of the eye alone seemed sufficient to prove an intelligent design in creation. Many curious facts are also brought out concerning the senses of touch and hearing, but we will content ourselves now with commending all intelligent readers to a book which they will find as entertaining as it is instructive.

The volume contains numerous illustrations explanatory of the various experiments with which the text is enlivened.

THE FALL OF THE STUARTS, AND WESTERN EUROPE FROM 1678 TO 1697. By the Rev. E. Hale, M.A. (*Epochs of Modern History*.) New York: Scribner, Armstrong & Co.

THE EARLY ROMAN EMPIRE. By W. W. Capes, M.A. (*Epochs of Ancient History*.) New York: Scribner, Armstrong & Co.

THE first of these handy little volumes belongs to the "*Epochs of Modern History*" series, the general plan of which, as exemplified in previous volumes, we have already noticed favorably. The epoch which Mr. Hale has chosen is one of the most interesting and striking in English history, and he gives a picture of it which, if somewhat confined in scope and cursory in treatment, is vivid and satisfactory as far as it goes. The characters of Charles, of Cromwell, and of James are sketched with a vigorous and impartial hand, and appear very lifelike, and the various minor figures that crowd the canvas receive fair and discriminating treatment. The striking procession of events which compose the Revolution (as it is called in England) is emphasized in a manner to impress them firmly upon the memory, and at the same time these events are linked with the great contemporary movement of European history in the neighboring countries. Mr. Hale appears to have bestowed much care upon the selection and sifting of his facts, and his lucid and animated style renders his book easy reading.

Almost the same terms of praise may be applied to the "*Early Roman Empire*," though it is only fair to say that Mr. Capes greatly surpasses Mr. Hale in the picturesque grouping of his materials and in graceful precision of narrative. His book consists substantially

of a series of brief biographical sketches of the Roman emperors from Augustus to Domitian, preceded by a rapid survey of the history of Rome from the death of Julius Cæsar to the battle of Actium, and followed by some highly instructive chapters on the position and function of the Emperor, the rights of Roman citizenship, life in the Provinces, the state of trade, the growing depopulation of Italy and Greece, the frontiers and the army, the moral standard of the age, and the revival of religious sentiment. Mr. Capes's portraits strike us as accurate and faithful, though his elaborate one of Augustus is less satisfactory than any of the others. He gives no adequate account of the youth of Octavius, of the nature of the influences which aided him in making good against Antony his claims to the sovereignty of the Roman world, of the successive steps by which he revolutionized the government of the country, or of the beneficial change which his character seemed to undergo when his position became secure, and he felt the responsibilities of absolute power. In all other respects his sketch is impressive, and the closing chapters on the general subjects which we have enumerated are singularly luminous and instructive.

WORKING PEOPLE AND THEIR EMPLOYERS. By Rev. Washington Gladden. Boston: Lockwood, Brooks & Co.

If working people and their employers could always hear such excellent sense as that which Mr. Gladden offers them, in the lectures composing this volume, we should have less talk about the irrepressible conflict between labor and capital, and fewer strikes, lockouts, and other similar perturbations of the industrial world. Mr. Gladden thoroughly understands his subject; he has no theories to advocate or crotchets to air; and his sympathies are broad enough to comprehend both parties to the great "struggle for existence." To the working people he expounds with remarkable simplicity and force those great natural laws, the operation of which they can not evade, and to which they must in wisdom adapt themselves; and upon capitalists and employers he urges the equally important consideration that enlightened self-interest—to say nothing of moral obligation and social duty—should prevent their taking all the advantage which their position seems to give them, in the adjustment of industrial forces. His lesson to the laboring man is that the conditions of the great problem are under his own control, but that its solution lies, not in strikes and trades-unions and exclusive guilds, but in self-denying economy, industry, and education. We can not share all his

faith in the immediate efficacy of co-operation, seeing that experience appears to have shown that successful co-operation implies higher mental and moral culture than is now possessed by the mass of the working people; but we are glad to recognize in his book an instrument which can hardly fail to help in bringing about that condition of public sentiment which will tend to secure the realization of his hopes.

The lectures were delivered on Sunday evenings, to the usual mixed congregations, and Mr. Gladden expresses a fear lest it may be thought that the themes are too secular for the pulpit; but surely the pulpit is seldom engaged in better work than in enlightening men and women regarding their individual and reciprocal duties.

NEAR TO NATURE'S HEART. By Rev. E. P. Roe. New York: Dodd, Mead & Co.

"Near to Nature's Heart" is at once the most labored and the least pleasing of Mr. Roe's novels. An attempt to mix religion, and romance, and history, in about equal proportions, would be likely to result in failure in any case, and Mr. Roe at least does not possess the literary skill requisite to the production of a really good historic-romantic-religious story. The introduction of Washington and Lafayette, and a description of the battle of Monmouth, go but a little way toward the reproduction of the Revolutionary period, while the delineation of such creatures as are represented as inhabiting the Highlands a century ago goes very far toward relegating the story to no period at all. There is a crudeness and lack of finish about the entire book which justify us in suggesting that if Mr. Roe were less solicitous about "helping his readers to do right," and more careful to perform his own self-assumed task in an artistic and workmanlike manner, neither morals nor religion would be likely to suffer. Surely it is worth while to do well whatever we undertake to do at all—even when the undertaking is a novel.

FOREIGN LITERARY NOTES.

THE Duke of Argyll is about to publish a sequel to his "Reign of Law."

DURING the year ended June last no less than seventy-six fresh newspapers and magazines appeared in Japan, of which fifty-five were started at Yedo.

PROF. SIDNEY COLVIN has in preparation a complete prose translation of the Homeric Hymns, to be published with introductions and illustrations from Greek art.

THE new volume of poems upon which M. Victor Hugo is engaged is thus far purely literary in its character, not dealing with political questions. Several of the poems are satires, in which the poet does his best to rub off old scores.

GEN. DI CESNOLA, who is now residing in London, is engaged upon a work on the History and Antiquities of Cyprus. A chapter upon the relations between Egypt and Cyprus will be contributed by Dr. Birch.

THE important works for completing the reconstruction of the National Library in Paris are about to be resumed. The total expenditure is estimated at 2,500,000 francs, and a credit of 400,000 francs has been voted.

GEN. LEFROY, the Governor of the Bermudas, has in the press a work on the Bermudas entitled "Memorials of the Discovery and Early Settlement of the Bermudas, or Somers Islands, from 1515 to 1685." Gen. Lefroy has been engaged for some time on such inquiries.

LAST year Alberto Bacchi della Lega issued his list of the editions, translations, and adaptations of the writings of Boccaccio. It was deservedly praised at the time of its appearance. Since then Signor Narducci, Librarian of the University of Rome, has prepared a supplement, which is to be published shortly, containing particulars of 150 editions not mentioned by Bacchi della Lega.

BRILL, of Leyden, proposes to publish extracts from the Talmud, embracing such parts of that voluminous work as are important or interesting even in the eyes of those who are not Israelites, relating to history, morals, archaeology, etc. The original text is to be accompanied by a literal German translation, together with necessary explanations and remarks.

ACCORDING to official statistics, 5206 books were issued in Russia during the years 1873 and 1874. Of these, 679 were theological, 323 legal, 113 agricultural, 247 historical, 247 geographical and ethnographical, 195 mathematical, 135 military, 34 scientific, 224 medical, 438 philological, 94 artistic, while 1851 treated of lighter literature, and 447 were translations of foreign *belles lettres*.

WE are glad to hear that the many proofs of his admiration for Miss Austen's novels which are to be found in the letters of Lord Macaulay, have led to a renewed demand for her writings. There is some hope for English fiction if "Pride and Prejudice," "Emma," and "Mansfield Park" regain popularity.

Those who are familiar with them will not tolerate the vulgar, flashy novels of the present day.

MESSRS. MACMILLAN & Co. will publish shortly a contribution to the history of popular progress, and of struggles for the free expression of opinion, in the press and elsewhere, from 1660 to 1820, with an application to later times. The nucleus of the volume is formed by the stirring events of the American War and the French Revolution, when popular opinion found expression through such channels as the writings of Junius and Wilkes, the trials and speeches of Horne Tooke, of Cobbett, and of William Hone.

THE *Allgemeine Zeitung* announces an interesting discovery made in one of the towers of the Stadtkirche at Weimar. In repairing a wall, an iron box was found containing eight documents, the most ancient of which was of the date 1593. These documents are in perfect preservation, and relate to the invasion of Croatia by the Turks, to the war of the bishopric of Zabern, the price of corn in the year 1620, the defeat of the Calvinists in Electoral Saxony, and to the marriage of Duke John of Saxony with the Princess Mary of Anhalt Altenburg.

AN interesting discovery has been made by Prof. Carl Hirsche, of the University of Heidelberg. It is that of an original MS. of the 'De Imitatione Christi,' in the Royal Library of Brussels. The discovery was made some little time ago, and the Professor has recently published at Berlin a new edition of this ancient manual of devotion in the original language, following the stichometrical arrangement of the sentences, as plainly indicated in the MS. No account of Hirsche's work has yet appeared in English.

SCIENCE AND ART.

COSMIC DUST.—We mentioned, some time ago, a curious paper in which M. Tissandier described the shape of certain metallic particles of dust collected from the atmosphere. We now find in the *Philosophical Magazine* an account of Professor Nordenskiöld's researches on the same subject. On the occasion of an extraordinary fall of snow which took place at Stockholm in December, 1871, the professor was curious to know whether the snow, so pure in appearance, did or did not contain any solid extraneous particles. He accordingly collected a large quantity of snow on a sheet, and obtained a small residue after it had melted away. This remainder consisted of a black powder resembling coal;

heated, it yielded a liquid by distillation; calcined, it was reduced to red-brown ashes. Moreover, it contained a number of metallic particles attracted by the magnet, and giving all the reactions of iron. In a large city such an experiment could not be considered conclusive, and Professor Nordenskiöld, therefore, during his Polar voyage in 1872, when he was blocked up by ice as early as the beginning of August in about 80° N. latitude, before reaching Parry's Island, to the northwest of Spitzbergen, examined the snow which covered the icebergs, and which had come from still higher latitudes. He found it strewn with a multitude of minute black particles, spread over the surface or situated at the bottom of little pits, a great number of which were to be seen on the outward layer of snow. Many of such particles were also lodged in the inferior strata. This dust, which became grey on drying, contained a large proportion of metallic particles attracted by the magnet, and capable of decomposing sulphate of copper. An observation made a little later upon other icebergs proved the presence of similar dust in a layer of granular crystalline snow situated beneath a stratum of light fresh, another of hardened, snow. Upon analysis this matter was composed of metallic iron, phosphorus, cobalt, and fragments of diatomaceæ. It bears the greatest analogy to the dust previously collected by the professor on the snows of Greenland, and described by him under the name of "kryokonite."

A NEW METAL.—The discovery of a new metal was announced to the French Academy of Sciences recently by M. Lecoq de Boisbaudran, a progressive French chemist. The new metal, which M. Lecoq calls gallium, was found by the spectroscope in zinc ores, with which metal it has much resemblance in common, although showing sufficient distinctive chemical characteristics. This addition raises the list of elements to 66, the metals alone being represented by 52 bodies.

THE SOLAR ATMOSPHERE.—Very various estimates of the absorption due to the sun's atmosphere have been made by different observers, who, with different forms of photometer, have attempted to measure the difference of brightness between the centre and margin of the sun's disc. Thus, Arago found the light near the edge to be 97.6 per cent. of that from the centre, while Secchi made it only 22 per cent., a discordance which points to something erroneous in the mode of observation. To decide this question Mr. Langley has, by means of two reflecting prisms, arranged that the rays from any two parts of an enlarged image of the sun formed by a telescope shall fall on opposite sides of a small

disc of paper as if they came from two lights, one on each side of the disc. On the disc is a small grease-spot which is seen bright or dark according as the stronger light is behind or in front of the paper, becoming undistinguishable when the illumination is the same on the two sides, a condition which can be secured by sliding the disc so as to bring it nearer to the fainter light. Mr. Langley has also used Rumford's photometer, in which the two shadows of a small rod cast by the two lights are compared. In this way he found a marked difference in color, the shadow illuminated by the light from the edge being chocolate-red, while the other is bluish, and he hence concludes that the sun would become more blue if its atmosphere were removed, while an increase in the depth of the latter would make the sun appear at the same time redder and darker. From numerous observations Mr. Langley concludes that the sun's atmosphere absorbs one half of his light and heat, and granting that four-fifths of the temperature of the earth's surface above absolute zero (500° Fahrenheit) is due to the presence of the sun, he infers that an increase in the absorption of the solar atmosphere of 25 per cent would diminish the temperature of our globe by 100° Fahr., reducing it far below that of the glacial epochs. Such a change as P. Secchi has supposed to have taken place between 1852 and 1873 in the sun's atmosphere, in order to account for the difference between his measures of the heat at different parts of the disc, and those made by Mr. Langley, would, therefore, according to the latter, be accompanied by a change of temperature, which is not supported by observation.

ELASTIC GLASS.—The process for the preparation of this remarkable substance, discovered by Bastie, and still in some measure secret, is said to be very simple, cheap, and unattended with danger. All vapors injurious to the health are avoided. The inventor estimates that the whole operation can be completed in a few hours, and that the expense will not reach 40 to 50 per cent of the value of ordinary kinds of glass. Repeated experiments indicate that its resistance to blows is fifty times that of ordinary glass, and that it is unaffected either by sudden cooling as in cold water, or by heating it in a stove. A plate thrown upon the floor rebounded with a metallic ring, and when forcibly broken separated into very small crystals, instead of into larger and smaller pieces, thus showing a peculiar change in molecular constitution. Samples of it have been made in the form of looking-glasses, large plates, lamp-chimneys, cups and saucers, cooking utensils, tubes, watch-glasses, etc.

THE EYE OF MAN IN THE FUTURE.—Science, says the *Medical Press and Circular*, gives us interesting details about what the human eye has been and what it may become. The Vedas of India, which are the most ancient written documents, attest that in times the most remote, but still recorded in history, only two colors were known, black and red. A very long time elapsed before the eye arrived at the perception of the color yellow, and a still longer time before green was distinguished; and it is remarkable that in the most ancient languages the terms which designated yellow insensibly passed to the signification of green. The Greeks had, according to the received opinion now, the perception of color very well developed; and yet authors of a more recent date assure us that in the time of Alexander, Greek painters had for fundamental colors only white, black, red, and yellow. The words to designate blue and violet were wanting to the Greeks in the most ancient times of their history; they called these colors grey and black. It is thus that the colors of the rainbow were only distinguished gradually, and the great Aristotle only knew four of them. It is a well-known fact that when the colors of the prism are photographed there remains outside the limits of the blue and violet in the spectrum a distinct impression, which our eyes do not recognize as a color. According to physiologists, a time will come when the human eye will be perfected, so as to discern this color as well as the others.

DOMESTIC MEASUREMENT OF MEDICINES.—The time-honored custom of measuring doses of medicine by tablespoonfuls, teaspoonfuls, and drops has received a rude shake in the *British Medical Journal* by Dr. R. Farquharson, and by Mr. Proctor in the *Pharmaceutical Journal*. It is found that modern table and tea spoons are much larger than they were formerly, and that a tablespoon of the present day contains considerably more than half an ounce. So, also, the teaspoon is no longer equivalent to a drachm. The size of a drop has not, of course, altered, but a drop is seldom, if ever, exactly equivalent to a minim, although it is assumed to be so. Much depends on the fluid, and not a little on the shape of the bottle from which it is dropped. As a rule the minim is considerably more bulky than a drop, and thus, when medicine is dropped instead of being measured in a minim glass, the patient's doses are smaller than they should be. It would, without doubt, be much better if domestic dispensers of medicines would use graduated measures instead of spoons or drops for measuring the doses of their patients, but, as

there is little chance of their doing so universally, the next best thing is to ascertain what the actual contents of "spoonfuls" really are. The average contents of tablespoons now in use equal from five to six drachms; the desert-spoon holds nearly half an ounce; and the teaspoon from eighty to eighty-five minims. Another useful measure for domestic purposes is the wine-glass, but this varies in its contents from two ounces and a half to three ounces and a quarter. These measures are, perhaps, sufficiently exact when ordinary medicine only is used, but when powerful and dangerous drugs are administered the only safe plan to adopt is to measure carefully into a graduated glass.

EXPERIMENTS ON THE PERIODIC WAVES OF THE SWISS LAKES.—At a recent meeting of the Physical Society of London, Prof. Forel, of Morges, Switzerland, gave, in French, an account of some interesting experiments which he has recently made on the periodic waves which take place on the Swiss lakes, and are there called "Seiches." It was long since observed that the waters of most of these lakes are subject to a more or less regular rise and fall, which at times have been found to be as much as one or two mètres. M. Forel has studied this phenomenon in nine different lakes, and finds that it varies with the length and depth of the lake, and that the waves are in every way analogous to those already studied by Prof. Guthrie in artificial troughs, and follow the laws which he has deduced from his experiments. Most of the experiments in Switzerland were made on the Lake of Geneva, but that of Neuchâtel was found to be best fitted for the study of the subject, possessing, as it does, an extremely regular geometric form. The apparatus he employed was very sensitive to the motion of the water, being capable of registering the waves caused by a steamboat half an hour after it had passed and five minutes before its arrival; and was so constructed as to eliminate the effect of common waves, and to register the motion, side by side, with a record of the state of the barometer, on paper kept in continuous motion. While he found the duration of waves to be ten minutes at Morges, it was seventy minutes at Geneva, and this is explained by the narrowness of the neck of the lake at the latter place. This period he proved to be independent of the amplitude, and to be least in the shortest lakes. For shallow lakes the period is lengthened; and his observations show that the period is a function of the length and depth, and that longitudinal and transverse waves may co-exist, just as Prof. Guthrie has shown to be the case in troughs.

VARIETIES.

THE TERRORS OF DEATH.—In comparing the grounds for fearing death in ancient and in modern times, it may be said roughly that the physical terrors of death are constant, while the moral terrors are variable. Not, indeed, that the mere physical terrors have been, strictly speaking, unchanged. For it is probable that the ancients, being used to hardship and suffering, were less sensitive to the sting of death than we are. On the other hand, it is certain that the progress of medicine, including the use of anaesthetics, has done something towards extracting that sting, and will in time do much more. No doubt, our medical improvements often increase the immediate fear of death which is felt by the dying; if the dying suffered more, their minds would be distracted, and they would shrink less from the final relief. But, at any rate, those medical improvements tend to mitigate the apprehension which the mere pain of dying excites in the world at large. And it is enough for my purpose that this pain of dying can hardly be worse with us than it was with our forefathers; the balance, if balance there is, is probably in our favor. Yet, strange to say, the entire terrors of death seem to be greater in our time than in that of the great classical writers. To prove this assertion would not be easy; but scholars will hardly dispute it. It is remarkable that Bacon, when maintaining the paradox that the fear of death is the weakest of emotions, chooses all his examples from among pagans. He mentions, among other instances, the dying jest of Vespasian: "Ut puto, Deus fio." It would be unfair to judge of the ancient indifference to death from this exceptional utterance; just as, on the other hand, it would be unfair to judge of the modern alarm at death from the case of Johnson, who, when the surgeon made slight scarifications in his swollen leg, exclaimed, "Deeper! deeper! I want length of life; and you are afraid of giving me pain, which I do not value." Yet it is hard not to think that these opposite frames of mind exhibit the ancient and modern tendencies in regard to death, though they exhibit them "writ large." The best of the ancients knew, as we do not know, how to obey the maxim of the great poet of stoicism, and to take a negative view of death as the mere end of life, the goal in the course of nature; if infirm or suffering, they could even go the length of Dryden's rendering of that maxim—

And count it nature's privilege to die.

Hence they managed to take death easily, through thinking of it as a matter of course, and thinking but little of it even thus; while

with us, on the other hand, death is just what Byron called it—"the doom we dread, yet dwell upon;" and it is life which now dwindles into being the accident of our existence—*l'antichambre de la mort*, or rather, *de l'éternité*. In truth, the ancients (or, more properly, the Greek and Roman free citizens), in seeking *fortem animum, mortis terrore carentem*, acted by anticipation on my friend's rule, not to regret the inevitable; and to this unregretfulness, this dislike of breaking their wings against the bars of their cage, they owed much of that light-hearted joyousness which formed a real side of their character, though a less important side than we are apt to think.—*Fortnightly Review*.

PIDGIN-ENGLISH.—Pidgin-English is that dialect of our language which is extensively used in the seaport towns of China as a means of communication between English or Americans and the natives. It is owing to the ease with which Chinese learn this dialect, and the willingness of foreigners to meet them half way in it, that it has spread to such an extent, thereby leading the way towards making English the language of the Pacific. And as Chinese learn a Latin tongue more easily than pure English, it is probable that had it not been for the Pidgin jargon, a corrupt Portuguese would have formed the popular medium of communication between foreigners and natives of China. The number of Portuguese words which now exist in Pidgin-English seem to prove this. As it is, our language in this rude form has spread, and is spreading to such an extent as to suggest several important problems. The coolie who speaks Pidgin has half his apprehension as to getting on in a foreign country removed, and the anticipated immigration of "millions of the Mongolian race" is beginning to cause serious reflection in America. Therefore Mr. Simpson looks forward to a time when it will be necessary to issue the Scriptures in Pidgin, and Captain Richard Burton gravely remarks in his "Ultima Thule," that "if English, as appears likely, is to become the cosmopolitan language of commerce, it will have to borrow from Chinese as much monosyllable, and as little inflection as possible. The Japanese," he adds, "have already commenced the systematic process of 'pidgeoning,' which for centuries has been used on the West African coast, in fact throughout tropical England, Hindostan alone excepted."—*Pidgin-English Sing-Song*, by Charles G. Leland. (London: Trübner and Co.)

SERVIA.—Servia is about one fifth smaller than Scotland, and sparsely inhabited by

1,352,000 inhabitants. Like Scotland, it is a land of mountains. On the south-west the mountains consist of offshoots of the Dinaric Alps, and elsewhere the branches of the Balkan chain. One of these, gathered into a knotty group in the centre of the country, forms the Rudrik Mountains. Another, running northwards, meets a range of the Carpathians, and with it forms the "Iron Gates" of the Danube. Nothing can exceed the wildness and stern sublimity of this celebrated portal, through which the great river flows. Generally speaking, Servia is traversed from south to north by extensive mountain ridges. These form valleys, which nowhere expand into plains. In its physical features the country is not unlike Bosnia and the Herzegovina, but with its green and well-wooded hills it is in striking contrast to the bare and sterile region of Montenegro. As Montenegro was the unconquered remnant of the old Servian Empire, therefore the little principality in the Black Mountain may, in that sense, be held as its truest representative. Modern Servia, however, on account alike of name, resources, and geographical position, claims continuity of national life with the Servia of the fourteenth century. The motto of the princes of the present house of Obrenovitch is "time and my right." Their arms represent a white cross on a red field, and on the cross are inscribed two dates, 1389—1815; between them lies a drawn sword. The first date commemorates the fatal fight of Kossova, when the Servians, overthrown by the Ottoman arms, became a subject people; the second marks the year when Milosch Obrenovitch went from his dwelling among the mountains of the interior to the church of Takovo to raise anew the standard of revolt. The drawn sword between the dates may be taken to indicate that the attitude of the subject Serbs on the Danube during four long centuries of Turkish rule was not one of servile submission, but of a nourished antagonism. What gives importance to the revolt of 1815 is that it resulted in the permanent acknowledgment of Servia by the Porte as a self-governing though still tributary power, under native rulers. Servia, restored to the Serbs, brought back with it the hope at some future time of entire independence, and of an extension of territory co-extensive with the old Servian kingdom. Nor do the free and warlike inhabitants of the Black Mountain entertain any jealousy of the national aspirations of their brethren on the Danube. The two Serb Powers are in close alliance, and between the families of the respective princes there exists a cordial friendship.—*Leisure Hour*.

Eclectic Magazine

OF

FOREIGN LITERATURE, SCIENCE, AND ART,

1877.

—♦♦—
(THIRTY-THIRD YEAR.)
—♦♦—

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PUBLISHER'S MISCELLANY.

SUBSCRIBERS who have not paid for the ECLECTIC for the present year, are particularly requested to remit without further delay.

CONDENSED CLASSICS.—Messrs. Henry Holt & Co. are about to begin the publication, in a condensed form, of a series of standard works of English fiction whose authors are no longer living, and which, not being impressed upon popular attention by the appearance of new works from the same writers, are gradually being crowded into the background. It is not intended to raise the question whether such works shall be read in this edition or in a complete one, but to meet the question already existing—whether in many instances, they shall be read in some such edition as this, or not read at all. The list of "books that everybody talks about and nobody reads" is growing with a rapidity that implies widespread ignorance regarding much of what is best in our literary heritage. It is in the hope of diminishing this ignorance, not of increasing it—of securing for the condensed editions many readers who would never attack the complete ones, that this series is begun. Though the elided passages are by no means worthless, yet for the purposes of the rapid reader who desires only the story and an uncritical knowledge of the author, they can well be spared, and the dramatic interest is intensified by reducing the amount of matter. The aim has been to cut out every thing that a skillful novel reader would skip, and every thing he might skip if he knew what were coming. This condensation leaves the novels, on the average, about half of their original bulk. The series is edited by Rossiter Johnson, editor of "Little Classics," and will begin with "Ivanhoe," by Sir Walter Scott, "Our Mutual Friend," by Dickens, and "The Last Days of Pompeii," by Bulwer.

MANUFACTURE OF PIANO-FORTES.—The actual materials used in piano-fortes may be worth stating. In every instrument there are sixteen kinds of wood, namely: pine, maple, spruce, cherry, walnut, whitewood, apple, basswood, and birch, all of which are indigenous, and mahogany, ebony, holly, cedar

and rosewood from Honduras, Ceylon, England, South-America and Germany. In this combination, elasticity, strength, pliability, toughness, resonance, lightness, durability and beauty are individual qualities, and the general result is voice. There are also used of the metals, iron, steel, brass, white metal, gun metal, and lead. There are in the same instrument of 7½ octaves when completed, 214 strings, making a total length of 787 feet of steel wire and 500 feet of white covering wire. Such a piano will weigh about 1000 pounds, and will last with good usage, twenty years. The total manufacture of pianos in New-York alone averages 15,000 per annum.

THE New-York correspondent of the Philadelphia *New Century for Women* says that Mrs. Foote, one of the most successful artists in the department of wood-drawing, will soon take up her residence in California. She has illustrated some of the most popular of the Messrs. Osgood & Co.'s Christmas books, as the "Hanging of the Crane" and "Mabel Martin." It is not her intention to allow her talent to lie idle, for she has engaged ahead enough book and magazine work to keep her busy for several years.

LABOR IN MASSACHUSETTS.—In the seventh annual report of the Bureau of Labor Statistics published returns are given from 80,893 persons, 63,263 of whom are males and 17,630 females; 71,339 are of the "wage" class, and 9,554 of the salary class; 47,864 of the total number return 142,386 persons dependent upon them for support. From returns by employers for 254,993 employes, it is found that the average yearly wages amount to \$413.37; and from returns made by 71,339 persons employed, it is found that they amount to \$418.39. On the other hand, 90 per cent of males and 93 per cent of females gave the average yearly earnings of the former as \$482.72, and of the latter, \$198.76. The highest average of yearly earnings, for males, is found to be in Suffolk County, \$576.19. Of the amounts earned aside from the regular occupations, the average for males in the State is seen to be \$119.69, being about one fourth as much as the regular yearly earnings. In the matter of children's earnings,

the average for males is \$327.65 for each family, a sum nearly one half as large as the fathers themselves earn at their regular occupations. Only 9 per cent, however, of the 80,893 persons answered the question. An extraordinary exhibit is made by Fall River, where they are seen to be \$458.86. From answers made by 48,747 males, it appears that the average daily wages is \$2.01. The average wages of females is seen to be 83 cents, but many of them are domestics and receive their board in addition. Twenty-three per cent of the male wage-receivers are found to own the houses in which they live; 44½ per cent of those who own houses have them encumbered with mortgages. The average amount paid for rent for males throughout the State is \$109.07, and for females \$93.62, which for males is 22½ per cent of wages.

THE ART JOURNAL.—The publishers of this Journal have made arrangements with the London Art Journal, a publication of world-wide celebrity, by which they use its steel plates and illustrations, and in addition they devote a large portion of their pages to American Art and American topics. This has made the Art Journal the most valuable publication of its kind in the world, and its circulation in this country is many times greater than its London rival. Some of its prominent features for this year are "The Homes of America," "The Far West," "American Artists and their Works," "Household Art," and other equally interesting topics to American readers. Every number contains three beautiful steel engravings, and among the finest that have been issued in the current volume are Showery Weather, Feast of Cherries, Michael Angelo, Marguerite, The Parting, Shrine in the Forest, and Ophelia. Any of these beautiful engravings are alone worth more than the price of the numbers. The Art Journal is published by D. Appleton & Co., and is sold only by subscription.

PROF. MAX MÜLLER has entered upon his duties as editor of the "Sacred Books of the East." The time employed in the work, the London Academy says, will be eight years, the whole series being completed in 24 volumes, three of which, it is expected, will be issued each year.

SPELLING-BEES.—The spelling-bee mania is just now at its height in England, and Mr. John Heywood, of Manchester, has turned it

to account by publishing "Spelling-Bee Cards," in nine packets, containing fifty words each. The packets are numbered from one to nine, being graded from easy to difficult words.

A PREMIUM WORTH \$30 IN GOLD.—Under this head we published an advertisement in the April number of *ECLECTIC* of the National Art Co., of Cincinnati, Ohio. We have no connection with the company whatever, and know nothing of them except that the advertisement was given us by Mr. W. I. Carleton, of this city, who is a very honorable business man, and would not be likely to insert the advertisement of any worthless concern. We make this explanation as several of our subscribers have sent to us 25 cents, with the request that we would send them the premium, and in all such cases we have returned the money and referred them to the Art Co.

BOOKS RECEIVED.

[The publisher will send any book reviewed in the *ECLECTIC*, or any other new publication, postage paid, on receipt of the price.]

Words: Their Use and Abuse. By WILLIAM MATHEWS, LL.D. Chicago: S. C. Griggs & Co. 12mo, cloth, pp. 384. Price \$2.

Transcendentalism in New-England. A History. By REV. OCTAVIUS BROOKS FROTHINGHAM. New-York: G. P. Putnam's Sons. 8vo, cloth, with portrait, pp. 395. Price \$2.50.

Spiritualism and Allied Causes and Conditions of Nervous Derangement. By WILLIAM A. HAMMOND, M.D. New-York: G. P. Putnam's Sons. 8vo, cloth, illustrated, pp. 366. Price \$2.50.

Clarel: A Poem and Pilgrimage in the Holy Land. By HERMAN MELVILLE. In two volumes. New-York: G. P. Putnam's Sons. 16mo, cloth, pp. 571.

The Land of the Sky; or, Adventures in Mountain By-ways. By CHRISTIAN REID. New-York: D. Appleton & Co. 8vo, cloth, illustrated, pp. 130. Price \$1.25.

The Fortunes of Miss Follen. By MRS. GOODWIN TALCOTT. New-York: D. Appleton & Co. 12mo, cloth, pp. 270. Price \$1.50.

The Warfare of Science. By ANDREW DICKSON WHITE, LL.D. New-York: D. Appleton & Co. 16mo, cloth, pp. 151. Price \$1.

Elements of Psychology. By PROF. HENRY N. DAY. New-York: G. P. Putnam's Sons. 12mo, cloth, pp. 248. Price \$1.50.

PUBLISHER'S MISCELLANY.

CLOCKS.—The time of the introduction of wheel-clocks moved by weights can not be fixed with any certainty. From the time of Archimedes, 220 B.C., to that of Robert Wallingford, abbot of St. Albans, in 1326, many ingenious men have been credited with the invention. To Boëthius (A.D. 510) has been accorded the honor, notwithstanding that it has been disputed whether it was a water or a wheel-and-weight clock which Pacificus of Verona, who lived nearly four centuries later, constructed, on the ground that the date was too early for such an invention. As, however, Gerbert, who became pope as Sylvester II., did undoubtedly construct a wheel-and-weight clock at Magdeburg, in 996, when he was archbishop, the belief that Pacificus might also have made one a little more than a century earlier is not unreasonable. But, however much the earlier history of clocks may be involved in doubt, it is certain that clocks driven by weights were in use in the monasteries of Europe in the eleventh century. The Catholic clergy are credited with the introduction of clocks into England. They possessed much wealth, and had leisure to cultivate many of the arts, and were probably led to the cultivation of horology from the desirableness of having some means of regulating their religious services. The first Westminster clock is said to have been erected from the proceeds of a fine which was imposed upon a chief-justice of the King's Bench, about 1290.—*Appletons' Cyclopedia.*

THE new volume of Dr. Orville Dewey's works, making volume four of his complete works as published by James Miller, is just ready for issue. It is called "The Two Commandments," and includes twenty sermons and papers by this veteran apostle of Unitarianism; the first six sermons dealing definitely with the commandment to love God, the next seven with the commandment to love our neighbor. Among the other chapters are several papers contributed to *Old and New*.

HENRY HOLT & Co. have added to their "Leisure Hour Series" "Ida Craven," the new English novel by Mrs. Cadell, a successful

story of life in India; and two more of Winthrop's books, "Edwin Brothertoft" and "Life in the Open Air." Dr. Koehler's "Practical Botany" is also ready. The book promises to be valuable to the botanizing amateur during vacation time. The many lithographic plates were all drawn on the stone by the author.

EDUCATION IN FRANCE.—In opposition to the scheme of free university education adopted by the French Assembly last year, of which the Roman Catholic Church has so vigorously availed itself, M. Waddington, the Minister of Public Instruction, proposes an entire reorganization of State education in France. His scheme embraces a development of primary, secondary, and university education. Beginning with the first, he proposes to make it compulsory, and for this purpose he asks an extra grant of five million francs. He looks to the departments and communes for fifteen million francs more. With this sum M. Waddington expects to increase the number of primary schools by 1000 in 1877. For secondary instruction he demands an extra appropriation of 1,200,000 francs, to be applied to the improvement of the appointments of the *lycées* and colleges. M. Waddington contemplates four great State universities—at Paris, Lyons, Bordeaux, and Nancy—which it is expected will in time absorb smaller institutions. Each university will have its own grants from the State and its own internal administration. This plan is strongly opposed by the Roman Catholic universities and their friends.

THE proposed flooding of the Sahara Desert is something more than mere talk. Mr. McKenzie, the projector, with an engineering party, is about leaving London for Western Africa, to make the necessary surveys for turning the waters of the Atlantic into the great desert. He is confident that a canal eight or nine miles long will accomplish the object, and enable the flooding of the low lands of the desert to be accomplished, so that Timbuctoo will be brought within navigable distance of the sea. The opening up of a vast trade with

the interior of Africa is the inducement offered for carrying out this project.

M. DE LA BASTIE's toughened glass has already become an article of commerce in England, where tumblers, finger-basins, lamp-chimneys, gas-globes, soda-water glasses, and the like made of it are now coming into general use, to the great advantage of the character of the "harmless necessary cat."

IMPERIAL GRANUM.—From a constant use of "Imperial Granum" in our family, extending over the past two years, we are enabled to certify to its excellence. In diseases of young children, incident on teething, we have found it of great value. It contains no stimulating properties, but acts through the digestive organs by its nourishing qualities. Its agreeable taste and flavor render it acceptable to the youngest infant.—*New-York Christian Weekly*.

A WISCONSIN editor illustrates the prevailing extravagance of the people of the present day by calling attention to the costly baby-carriages in use now, while, when he was a baby, they hauled him around by the hair of his head.

BOOKS RECEIVED.

[The publisher will send any book reviewed in the ECLECTIC, or any other new publication, postage paid, on receipt of the price.]

Practical Botany, Structural and Systematic. The latter portion being an Analytical Key to the Wild Flowering Plants, Trees, Shrubs, Ordinary Herbs, Sedges and Grasses of the Northern and Middle United States east of the Mississippi. By AUGUST KOEHLER, M.D. Copiously illustrated. New-York: *Henry Holt & Co.* 8vo, cloth, pp. 400. Price \$3.

Ida Craven. A Novel. By H. M. CADELL. Leisure Hour Series. New-York: *Henry Holt & Co.* 16mo, cloth, pp. 318. Price \$1.25.

Science Primers. VIII. Botany. By J. D. HOOKER, C.B., F.R.S. With illustrations. New-York: *D. Appleton & Co.* 18mo, cloth, pp. 117. Price 50 cents.

Familiar Talks to Boys. By the Rev. JOHN HALL, D.D. New-York: *Dodd, Mead & Co.* 12mo, cloth, pp. 98. Price \$1.25.

The Pilot and his Wife. A Norse Love Story. By JONAS LIE. Translated by Mrs. Ole Bull.

Chicago: *S. C. Griggs & Co.* 12mo, cloth, pp. 336. Price \$1.50.

Paper Money Inflation in France: How it Came, What it Brought, and How it Ended. By ANDREW D. WHITE. New-York: *D. Appleton & Co.* 8vo, paper, pp. 69. Price 50 cents.

Appletons' Illustrated Hand-book of American Summer Resorts, including Tours and Excursions. With maps. 12mo, pp: 166. Price, cloth, 75 cents; paper, 50 cents.

The Atonement of Leam Dundas. By Mrs. E. LYNN LINTON. Illustrated. Philadelphia: *J. B. Lippincott & Co.* 8vo, paper, pp. 244. Price \$1.

Working People and their Employers. By the Rev. WASHINGTON GLADDEN. Boston: *Lockwood, Brooks & Co.* 12mo, cloth, pp. 241. Price \$1.75.

Is "Eternal" Punishment Endless? Answered by a Restatement of the Original Scriptural Doctrine, by an Orthodox Minister of the Gospel. Boston: *Lockwood, Brooks & Co.* 16mo, cloth, pp. 106. Price \$1.

A Centennial Commissioner in Europe. 1874-76. By JOHN W. FORNEY. Philadelphia: *J. B. Lippincott & Co.* 12mo, cloth, pp. 412. Price \$2.

Elements of Psychology. By Prof. HENRY N. DAY. New-York: *G. P. Putnam's Sons.* 12mo, cloth, pp. 248. Price \$1.50.

The Fall of the Stuarts, and Western Europe from 1678 to 1697. By the Rev. E. HALE, M.A. Epochs of Modern History. New-York: *Scribner, Armstrong & Co.* 16mo, cloth, with maps and plans. pp. 252. Price \$1.

The Warfare of Science. By ANDREW DICKSON WHITE, LL.D. New-York: *D. Appleton & Co.* 16mo, cloth, pp. 151. Price \$1.

Life of Israel Putnam, Major-General in the Continental Army. By INCREASE N. TARBOX. With map and illustrations. Boston: *Lockwood, Brooks & Co.* 8vo, cloth, pp. 389. Price \$2.50.

The Fortunes of Miss Follen. By Mrs. GOODWIN-TALCOTT. New-York: *D. Appleton & Co.* 12mo, cloth, pp. 270. Price \$1.50.

PUBLISHER'S MISCELLANY.

THE NEW POSTAL RATES.

For the information of our readers we give below the new postage law, which is now in operation. The postage on the *ECLECTIC* is four cents per copy, so our subscribers can re-mail their copies at this rate, and should they desire to send us their copies for binding, they can send them to us by prepaying postage, forty eight cents per year. Booksellers and other dealers can return Magazines to the office of publication at the regular rate paid by publishers for third class matter.

The following mailable matter shall be admitted to, and transmitted through, the mails at the rate of *one cent* for every *two ounces* or fractional part thereof, and one cent for each additional two ounces or fractional part thereof, to wit: Pamphlets, occasional publications, transient newspapers, magazines, books, periodicals, handbills, posters, sheet-music (printed), prospectuses, maps, proof-sheets, regular publications designed primarily for advertising purposes, or for free circulation at nominal rates, and corrected proof-sheets.

The following mailable matter shall be admitted to, and transmitted through, the mails at the rate of *one cent* for each *ounce* or fractional part thereof, to wit: Printed cards and blanks, lithographs, prints, chromo lithographs, engravings, photographs and stereo scopic views, book manuscripts, unsealed circulars, seeds, cuttings, bulbs, roots and cions flexible patterns, samples of ores, metals, minerals, and merchandise, sample cards, photographic paper, letter envelopes, postal envelopes, and wrappers, unprinted cards, plain and ornamental paper, card-board or other flexible material, and all other mailable matter of the third class not herein enumerated.

"THE AMERICAN ANGLER'S GUIDE; OR, COMPLETE FISHER'S MANUAL FOR THE UNITED STATES, by John J. Brown—a book that has been an authority with American disciples of Walton for a full generation. It was first issued in 1849, and D. Appleton & Co. will publish at once a new and fifth edition, which will have a new third part, devoted chiefly to Southern and Western fishes, but treating also

of other matters in which the book needed to be brought up to date. The other parts are from the old plates, and curious enough they are with their quaint border side-shows of eager fishermen in the clothes of long ago. The book has many accurate illustrations of the more important fishes.

PAPIER-MACHÉ ORNAMENTS.—Some English papier-maché articles are remarkable not only for their form and general appearance, but also for their durability. They are manufactured by first pressing a sheet of very porous, but strong paper, manufactured expressly for the purpose, upon the metal greased with tallow. This is then coated with good flour paste, and a second sheet is laid on, and pressed and rubbed, until it takes the form of the model and adheres firmly. The whole is then placed in a drying-chamber at about 104°, and then the operations of laying on and drying are repeated until the desired thickness is produced—20 to 40 sheets being frequently required for the purpose. The form is then removed, all the sides are carefully adjusted, and the article is then hardened by first immersing it in linseed oil and purified wood tar, and coating six to eight times with varnish, allowing it to dry thoroughly after each coat. It is finally ground down with pumice-stone, and ornamented with bronze, gold, or mother-of-pearl. Cheaper articles are manufactured from a mixture of paper pulp with certain proportions of white lead, rosin, linseed oil, and sugar of lead, carefully kneaded and rolled by the aid of steam. This is then pressed into molds and dried. The most ordinary articles are made of pulp and earth colors, with the addition of some hardening cement.

THE RUSSIAN FAIR.—The great Russian fair, which 60 years since was transferred to Nijni-Novgorod from its ancient locality in the meadows near the Monastery of Macarieva, opens on the 25th of June (old style), and comes to a close early in September. Mr. Doria, Secretary of the British Embassy at St. Petersburg, reports that it is calculated that a million persons visited the fair last year.

The value of the merchandise actually sold at the fair has risen to 165,000,000 roubles in 1874. The site, at the confluence of the Oka and Volga, is unrivaled in the whole empire for water communication. Between the immense market halls and the moat which surrounds them, is the celebrated subterranean gallery, washed by the water from Lake Mestcherski, which, rushing with great impetus into the gallery, cleanses it thoroughly, carrying away all rubbish into the river Oka, whose level is six yards lower than that of the lake. The wholesale trade in iron, in different forms, amounted at the fair in 1874 to £2,198,812. Tea of the value of upward of 10,000,000 roubles was also sold. Along the banks of the lake enormous pyramids of chests of tea are heaped upon the ground, covered only with matting made from the inner bark of the birch tree. These chests of tea, called "tsibiki," are so packed as to be impervious to rain or damp. Outside the ordinary wooden chest is a covering of wicker-work of cane or bamboo, round which, at Kiakhita, raw bull-hides are tightly stretched, with the hair inward. These chests arrive at Nijni from China, having been received in barter, at Kiakhita or Maimatchin, on the Chinese border of Russia, for Russian manufactures of cotton or wool. Large sales are made of corn and of leather at the fair, of fruits from Persia, of madder and wine from the Caucasus, and of cotton and skins from Bokharia.

THE colossal statue of Liberty to be erected on Bedloe's Island, in New-York Harbor, is to be made of beaten copper, and will be 112 feet in height to the top of the head, and 138 to the top of the torch. As it is designed to stand on a pedestal 82 feet high, the entire column will be 220 feet above the ground. This work was projected to mark our Centennial year by a society in Paris called the "Franco-American Union." M. Bartholdi, the sculptor, is now in this country, and will exhibit the cast of the torch-bearing hand at the Centennial in Philadelphia.

VIRGINIA CITY, Nevada, is one of the busiest cities in the world. Losses by the fire of some months ago are being rapidly replaced, and the general aspect of the town will be much improved when these are rebuilt. For several weeks past, the daily consumption of lumber for building purposes alone, has reached between 80,000 and 100,000 feet. The mines use a larger quantity, and as they are developed, the

demand for lumber increases in like ratio. It is stated that the Consolidated Virginia Mine absorbs 1,250,000 feet monthly. Those who have visited the mines will understand why this large consumption is necessary. Every level, drift, and winze is shored up with timbers. It is estimated that at least 300,000,000 feet of lumber have been buried in the Comstock Mines during the last seventeen years. Beyond this tremendous consumption of wood about the mines, from 300 to 400 cords are used daily for fuel.

MR. HENRY BLACKBURN has in preparation a series of illustrated handbooks to the English national collections of pictures, sculpture, etc., uniform with "Academy Notes." The first part will contain sketches of some of the principal pictures in the National Gallery, and will be published by Messrs Chatto & Windus.

HENRY HOLT & Co. have just added two more volumes to their popular Leisure Hour Series—"Giannetto," by Lady Margaret Majendie, and the famous "Rejected Addresses," by Horace and James Smith. The initial volume of their new Series of "Condensed Classics," "Ivanhoe," by Sir Walter Scott, is promised early in September. "Fifty Years of my Life," by George Thomas, Earl of Albemarle, with a steel portrait by Jeens, will also be ready in September.

BOOKS RECEIVED.

[The publisher will send any book reviewed in the *ECLECTIC*, or any other new publication, postage paid, on receipt of the price.]

Revolutionary Times. By EDWARD AB-BOTT. Boston: Roberts Bros. 18mo, cloth, pp. 208. Price \$1.

Meditations on the Essence of Christianity. By ROBERT LAIRD COLLIER, D.D. Boston: Roberts Bros. 12mo, cloth, pp. 138. Price \$1.25.

Silver Pitchers and Independence. A Revolutionary Love Story. By LOUISA M. ALCOTT. Boston: Roberts Bros. 16mo, cloth, illustrated, pp. 307. Price \$1.50.

Religion and Philosophy of Swedenborg. By THEOPHILUS PARSONS, LL.D. Boston: Roberts Bros. 16mo, cloth, pp. 318. Price \$1.25.

Giannetto. By LADY MARGARET MAJENDIE. "Leisure Hour Series." New-York: Henry Holt & Co. 16mo, cloth, pp. 180. Price \$1.25.

PUBLISHER'S MISCELLANY.

DAVID A. WELLS ON COMMERCIAL DEPRESSION.

THE following extract from the address of David A. Wells, the well-known statistician, delivered by him before the convention of social science, of which he is president, and which recently met at Saratoga, will, we think, be of value at this time in furnishing some solution for the oft-repeated question, "Why are commercial interests so depressed?"

It is evident from examination, that the present condition of the country is not due to natural causes. It is due to artificial causes, and, as such, can be removed. The first point that strikes attention, is the universality of the present depression in business. It is world-wide, though slight in particular nations, as in France. It is the greatest in the United States. This does not teach, however, that the depression is due entirely to causes acting universally, but investigation will show that the general result we recognize has been due rather to the concurrent action of very many causes, originally local, and which, if nations had been isolated to the extent that they were a hundred years ago, would have been exceedingly limited, or endemic, in their influences, but which, under the close relationship into which nations have been brought by improved means of intercommunication, have become all-pervading, or epidemic, in their influences. Of such general causes originating specially in one country, but coming into action and producing disturbance throughout the whole circle of civilized states at nearly the same time, I can think of only one that is entitled to be thus classified, and that is the steady and extensive introduction and use of labor-saving machinery and processes. A more important influence, however, is the aggregate loss of capital which for ten or fifteen years the world has been experiencing. These losses are due to bad investments in railroad bonds, the colossal war expenditures of the world (the national debts of the world have increased ten billion dollars since 1861, making their aggregate now twenty-five billion dollars), the panics and mercantile failures of the world, the bankruptcy of governments, and the enormous increase of taxation, particularly in the United States.

Another agency, which has operated conjointly and even more powerfully than war expenditures and an excessive irredeemable currency to impair the aggregate of national abundance, by diverting labor from productive to unproductive or less productive employments, and which is even now in full continuance, has been, and is the wholesale recognition and practical application since 1860, of the doctrine of extreme protection as a part of our national fiscal policy. And the loss of capital and waste of labor which we have experienced, and are now experiencing in consequence of this policy, have contributed more than any one thing, in my opinion, to make us poor, and it will continue to keep us so, so long as it is continued. And how long it will be continued, will depend on just how long it will take our people to realize the truth of the quaint and homely expression which Lowell puts into the mouth of Hosea Bigelow, that "a man has got to get up early that expects to get around God."

GOODYEAR'S POCKET GYMNASIUM.—Of late years there have been many inventions for physical education, and certainly no country has more need of them, or a larger field for their use, than our own. In regular gymnasiums, the trouble and the time demanded for physical improvement prevent most people from attending them, however beneficial they might be; hence Parlor Gymnasiums and Health Lifts have of late become very popular. Even to these, however, there are various objections, the expense and the amount of space they occupy being chief among them. Now, however, by the use of a simple rubber tube, any thing can be accomplished that is sought for in the most elaborate gymnasium. The object of exercise should be to develop all the organs of the body in harmony with each other, and, by the various motions of the pocket gymnasium, every muscle of the body is brought into play, or if it is desired to exercise a particular set of muscles, this can be done without tiring the other parts of the body. In fact, it combines all the advantages of the health lift and the ordinary gymnastic exercises. It is particularly useful for students, clergymen, lawyers, and others of sedentary habits, as it is

so light and portable it can be carried in the pocket, and is at all times ready for use. Our readers will find an advertisement of it in this number of the *ECLECTIC*, and we commend it to all who are in need of such exercises.

THE PUBLIC LIBRARIES OF EUROPE.—There are ninety-four public libraries in Europe, which contain more than 100,000 printed volumes each, and whose collections number in the aggregate more than 21,000,000 volumes. Many of them have, in addition, thousands of valuable manuscripts. Of these great store-houses of learning, the National Library of Paris is the largest, it containing 2,000,000 printed volumes, and 150,000 manuscripts. The second position is disputed by the library of the British Museum and the Imperial Library of St. Petersburg, each of which claims to possess 1,100,000 volumes. The next position among the great collections of the world belongs to the Royal Library of Munich, with its 900,000 volumes. The Royal Library of Berlin has 700,000 volumes; the Imperial of Vienna, 600,000; the Royal of Copenhagen, 550,000; the Royal of Dresden, 500,000; and the Royal of Stuttgart, 450,000. Next in importance are the great University Libraries of Cambridge and Göttingen, each of which possesses 400,000 volumes. The University of Breslau has 350,000; the Bodleian of Oxford, 310,000; and the Advocates of Edinburgh, the Grand-Ducal of Darmstadt, and the City of Strasbourg, 300,000 each. The following contain 200,000 volumes or more: The Arsenal and St. Geneviève of Paris, the University of Bonn, the City of Hamburg, the University of Heidelberg, Jena, Königsberg, Leipsic, Munich, and Tübingen, respectively; the Ducal of Wolfenbüttel, the National of Pesth, the University of Bologna, the National of Florence, Naples, and Madrid, respectively; the Royal of Brussels, the University of Copenhagen, and the University of Christiania.—*Appletons' Cyclopaedia*.

LONGEVITY OF BRAIN-WORKERS.—That great thinkers and hard brain-workers are long-lived is asserted, with a considerable array of facts, in a volume by Dr. Beard. He presents a list of some five hundred of the most eminent names in history, including a number like Pascal, Mozart, Keats and others, who died young, and finds the average age of the five hundred to have been over sixty-four

years. As this is far beyond the average age of farmers, mechanics, and business men, he concludes that the wear and tear of brain work is not so exhausting as is commonly supposed, and that it rarely shortens life. The *London Spectator*, however, reviewing this theory, maintains that excessive mental toil must shorten life, and did evidently shorten it in the case of many of the five hundred cited; but they had originally more vigorous constitutions and a large amount of vital force, and, by virtue of this superior vitality, which explains in part, also, their superior brain power, they were able to continue hard work even to old age, before breaking down under the pressure; though the same vital force would have prolonged life for many years if they had not exhausted it prematurely.

"DANIEL DERONDA."—The event of the month in literary circles is the issue of the concluding volume of George Eliot's greatest work. No story for years has called forth so much attention and discussion, and few books have had a larger sale. A one-volume paper edition of the work complete will shortly be issued by the publishers, Messrs. Harper & Brothers.

MORTALITY OF CITY AND COUNTRY.—Dr. James Stark's investigations and statistics of the relative mortality of town and rural districts in Scotland, are published in the *Edinburgh Medical Journal*. Of the striking facts brought to light by Dr. Stark, the following appear to be among the most important: That, were all the town children of Scotland reared in the country, at least eight thousand lives would be annually saved to the population; second, could the mortality of the towns be brought down to that of the mainland districts, upward of thirteen thousand lives would be thus saved to the population, and every individual living in the large towns would, on an average, live ten and a half years longer than he has any chance of doing at present. Still further, if from the rural districts were excluded the towns with populations varying from three thousand to ten thousand inhabitants, the mean age at death would have been about forty years instead of thirty-five, and, could the mortality of the towns be brought down to that of the purely rural districts of the mainland, then the average life of the town population would be increased about fifteen years.

PUBLISHER'S MISCELLANY.

NOTICE.

DURING the last month we have sent by mail a special notice to all subscribers who have not yet paid their subscriptions to the *ECLECTIC*, asking them to remit, and, at the same time, inclosing an envelope bearing our address. The responses have generally been prompt, but there are still quite a number who have not yet been heard from, and as the year is now drawing to a close, we hope there will be no more delay in remitting the amounts due.

SEVERAL of the most expensive buildings in Broadway, in Broad Street, and in Wall Street, New-York, are owned by the Empress Eugenie, who derives from them every year a rent of sixty-five thousand dollars. When the Duke of Nassau, one of the dispossessed German princes of 1866, was here in 1868, he purchased tenements in Allen Street that to-day are nominally owned by German notaries public, and that yield him twelve per cent on the capital invested. The Grand Duke of Mecklenburg-Schwerin, Frederick Francis II., is the owner of lots and houses in Elm Street. Queen Victoria owns considerable real estate in Broadway, which stands in the name of an Englishman. The King of Sweden owns five hundred thousand dollars' worth of real estate in New-York; and the Grand Duke Alexis owns a hotel in Broadway. King Bomba bought six houses in Greenwich Street in 1852, and they are held by Italians for his son Francis II.

ENGRAVINGS.—We call the attention of our readers to the list of new engravings which we advertise in this number of the *ECLECTIC*, and which we have recently added to our catalogue of fine imported engravings. This new list comprises some of the finest recent works of foreign artists of celebrity, and one can hardly go amiss in making a selection from it. We can send by mail or express to any part of the country, and our engravings always arrive in good order. We have also made a large re-

duction in the price of many of the engravings in our old catalogue, especially those of American scenery, which are now reduced to one dollar and fifty cents each, or five of them will be sent to one address on receipt of five dollars. Parties who have our catalogue and wish to know the reduction in price, will be furnished with a circular giving the reduced rates, on application.

M. ALPHONSE DAUDET in the *Journal Officiel*, states that the parish priest of the Island of Houat, off the coast of Brittany, wields supreme power over the two hundred and nineteen inhabitants. He is mayor, municipal council, and priest; he has charge of the military fortifications; when his parishioners drink too much wine and disturb the public peace he becomes the village policeman and arrests them; when the fishermen quarrel over their nets he takes his seat upon the bench as justice of the sessions; he is the village baker, carrying in his pocket the keys of the only oven on the island, so that all the inhabitants take their flour to him; he has the monopoly of the sale of wines and liquors; whenever any one is sick he is called in as physician, and the sisters of charity make out his prescriptions; and finally, he is superintendent of the submarine telegraph. Altogether, he is the only Frenchman since Louis XIV. who can say with good grace, "*L'état c'est moi.*"

DR. BEARD states that from an analysis of the lives of a thousand representative men in all the great branches of the human family, he made the discovery that the golden decade was between forty and fifty; the brazen between twenty and thirty; the iron between fifty and sixty. The superiority of youth and middle life over old age in original work appears all the greater when we consider the fact that all the positions of honor and prestige—professorships and public stations—are in the hand of the old. Reputation, like money and position, is mainly confined to the old. Men are not widely known until long after they have done the work that gives

them their fame. Portraits of great men are delusions; statues are lies! They are taken when men have become famous, which, on the average, is at least twenty-five years after they did the work which gave them their fame. Original work requires enthusiasm. If all the original work done by men under forty-five were annihilated, they would be reduced to barbarism. Men are at their best at that time when enthusiasm and experience are almost evenly balanced. This period, on the average, is from thirty-eight to forty. After this the law is that experience increases, but enthusiasm decreases.

THE staff of Johns Hopkins University, consisting of the president and six professors, twelve associates and twenty fellows, are now assembled, and are engaged in the examination of students and the formation of classes. The number of candidates for admission is much larger than was anticipated. Most of them are from Baltimore and vicinity; but perhaps a fourth come from Virginia, North Carolina, and other States. About twenty college graduates (in addition to the fellows) have applied for instruction, many of them in the laboratory of biology. The books and apparatus in physics, chemistry, and biology (animal physiology) are arriving constantly. The afternoon lectures began with the first lecture of Prof. Gildersleeve on Greek lyric poetry. Prof. Rabillon's course on French literature has commenced. These afternoon lectures will be continued through the winter, with courses by Lowell, Child, Whitney, Walker, Hilgard, Newcome, Mallet, and others, and are open to ladies as well as gentlemen, whether connected with the university or not.

DEATHS by drowning have been exceedingly frequent the summer past. Every day we have read of them, often several in a day. The long continued heat drove multitudes into the water for relief. Boating and bathing are favorite summer pastimes; but their peculiar risks are too little thought of in the keen enjoyment of the sport. People who can not swim venture beyond their depth, and the best swimmers take the chances of collision, cramp, or other aquatic mishap. It is a sad thought that most of the many scores of persons drowned this season had no accident insurance. Only two, so far, were insured in the Travelers.

BOOKS RECEIVED.

[The publisher will send any book reviewed in the *ECLECTIC*, or any other new publication postage paid, on receipt of the price.]

Working People and their Employers. By REV. WASHINGTON GLADDEN. Boston: Lockwood, Brooks & Co. 12mo, cloth, pp. 241. Price, \$1.75.

Is "Eternal" Punishment Endless? Answer by a Restatement of the Original Scriptural Doctrine. By an Orthodox Minister of the Gospel. Boston: Lockwood, Brooks & Co. 16mo, cloth, pp. 106. Price, \$1.

A Centennial Commissioner in Europe. 1874-76. By JOHN W. FORNEY. Philadelphia: J. B. Lippincott & Co. 12mo, cloth, pp. 412. Price, \$2.

The Fall of the Stuarts, and Western Europe, from 1678 to 1697. By the REV. E. HALE, M.A. Epochs of Modern History. New-York: Scribner, Armstrong & Co. 16mo, cloth, with maps and plans, pp. 252. Price, \$1.

Every-Day Topics. A Book of Briefs. By J. G. HOLLAND. New-York: Scribner, Armstrong & Co. 12mo, cloth, pp. 391. Price, \$1.75.

Near to Nature's Heart. By REV. E. P. ROE. New-York: Dodd, Mead & Co. 12mo, cloth, pp. 556. Price, \$1.75.

Elsie's Motherhood: A Sequel to "Elsie's Womanhood." By MARTHA FINLAY (Farquharson). New-York: Dodd, Mead & Co. 16mo, cloth, illustrated, pp. 376. Price, \$1.50.

Religion and the State; or, The Bible and the Public Schools. By SAMUEL T. SPEAR, D.D. New-York: Dodd, Mead & Co. 12mo, cloth, pp. 393. Price, \$1.50.

The Ultimate Generalization. An Effort in the Philosophy of Science. New-York: Charles P. Somerby. 12mo, cloth, pp. 56. Price,

Eighteen Presidents and Contemporaneous Rulers. By W. A. TAYLOR. Pittsburg: Published by the Author. 16mo, paper, illustrated, pp. 176. Price, 50 cents.

Paper Money Inflation in France: How it Came, What it Brought, and How it Ended. By ANDREW D. WHITE. New-York: D. Appleton & Co. 8vo, paper, pp. 70. Price, 25 cents.

Friedrich Froebel. A Biographical Sketch. By MATHILDA H. KRIEGER. With Portrait. New-York: E. Steiger. 12mo, cloth, pp. 29. Price, 50 cents.

PUBLISHER'S MISCELLANY.

NOTICE.

As the present number of the *ECLECTIC* closes the twenty-fourth volume of the new series, we hope those subscribers whose subscriptions are paid up to this month will remit for the new year as promptly as possible.

Our subscribers will materially assist us by sending the name of some new subscriber when they send their own renewals.

We make special inducements to clubs of five or more names, and shall be glad to furnish estimates for libraries or reading clubs with any list of periodicals they may require.

J. B. LIPPINCOTT & Co. have nearly ready, *Animals Painted by Themselves*, translated from the French, containing two hundred illustrations from the vignettes of Grandville, and edited by James Thompson, F.R.G.S. They announce for immediate issue, "*Gray Beard's*" *Lay Sermons*. They are summaries of the chief doctrines of the Bible, as interpreted and illustrated by the Scriptures themselves; were written by John Franklin Graff, and published originally in the *Philadelphia Press*, where they attracted much attention. They also announce the following books for young people: *The Boys and Girls of the Revolution*; a volume of interesting stories of their heroic deeds during the war for independence, by Charles H. Woodman. *Sunshine in Shady Places*; a Christmas story, by Edith Milnor, author of *Fifful Gleams from Fancy Lands*; and *The Village School*, by the author of *Child Nature*, and other poems by well-known writers; a book for boys and girls from seven to seventy years of age, with many illustrations.

HABITS OF AUTHORS.—It is always interesting to know the methods of composition used by clever writers. There was Hawthorne, who made notes innumerable—to be afterward worked into his stories—of every fitting, quaint fancy, strange recital, or peculiar personality. Several of the most distinguished

American writers have the habit of jotting down a sentence, or a line or two here and there down a long page, and then filling up the outline thus made with persistent revision. Wordsworth, in composing, was prone to a slate pencil and the smooth side of a rock; Schiller sat up all night to write and drink Rhine wine, and Walter Scott worked fasting from five in the morning till about ten.

DISTINGUISHED AND MERITED HONOR.—The noted Rochester firm, W. S. Kimball & Co., carried off the *very highest* honors at the Centennial on their display of manufactured tobaccos—Vanity Fair smoking, Peerless chewing tobacco and cigarettes. While all worthy exhibitors received the uniform bronze medal, Kimball & Co. received in addition the Diploma of Honor, and what is acknowledged the highest proof of merit, the *Judges' Special Report*, an honor few receive. These three honors, therefore—the Grand Medal of Merit, the Diploma of Honor, and the Judges' Special Report, added to their honors at Vienna, with the medal awarded them at the Western New-York State Fair this year, make five First Prize Medals, which is a record to be proud of.

THE OPTIMIST OPTICIAN.—Among the best deserved honors awarded by the Centennial judges are those given to H. Waldstein, the well-known oculist and optician, 545 Broadway. The house has been established more than a quarter of a century, and its productions are sought alike by the fashionable, the military and the scientific classes. Its opera-glasses, the *ne plus ultra* of combined elegance and power, its field and tourist glasses, and its perfected instruments for scientific purposes, are widely known as of the best that the skill of Europe and America has been able to produce.

EAST RIVER BRIDGE.—The first of the "cradle" cables of the East River Bridge, which was recently successfully placed in position, weighs about 33,000 pounds. It is composed of seven strands of nineteen wires each, and is 3700 feet long.

DAVID DAMOUNA.

FOR THE USE OF THOSE WHO WILL NOT BE AT THE
PAINS OF READING "DANIEL DERONDA."

I.

GERALDINE HARTOPF was considered by the exoteric to be a girl of a striking beauty. The truth, known to the esoteric few, was that there was a certain hydrostatic force in her aspect which compelled either admiration or hate, and had been known to draw tears of envy. She pawned her necklace at Baden Baden to pay a gambling debt, and next day it was returned to her with a mysterious note, which she associated with a mysterious stranger, who had watched her with some contempt in his hooked nose as she played. After this her family was ruined.

II.

Courtebotte was immensely rich, and descended from a line of kings. He sat at breakfast with his hanger-on, Plush, whom he fed alternately with the dogs who cringed at his feet. Plush, for his own reasons, tried to dissuade Courtebotte from proposing to Geraldine, but received for answer a kick and an oath in an inward voice.

III.

Geraldine, finding that she could not go on the stage, resolved to marry Courtebotte, who had several other establishments.

IV.

While Damouna was exploring a synagogue, an ancient Jew plucked him by the coat, and said, "Look here, ma tear, you are one of us."

V.

This made Damouna think, and hold himself up by the coat collar—a favorite action of his. He then pulled a Jewish girl out of a river, and became acquainted with a consumptive Hebrew who wrote poetry, and addressed Damouna as his brother.

VI.

Courtebotte's high breeding came out in his habit of beating his wife, and swearing at her in his inward voice.

VII.

Damouna met his hitherto unknown mother, who was a Jewish opera singer. "S'help me," he cried in ecstasy, "I always thought I was a Jew!"

VIII.

Geraldine was never quite sure whether she helped her husband to drown or not. Damouna advised her to keep it dark, but did not propose to marry her. "It is no matter," she

said, "I shall be a better woman for all you have said to me." "Shallabalah!" said Damouna, taking himself up by the collar, and lifting himself out of the room. After this, he married the little Jewess he had pulled out of the river.—*Examiner*.

TREES IN CHINA.—China has its big trees as well as California. About thirty miles from Nikko, an avenue of sugi, or cedar trees, begins, and, with an occasional break where there is a village, it reaches the whole distance to the shrine of Lycyas—the longest avenue of shade in the world. These great trees are from five to seven feet in diameter at the base, and tower without a branch for fifty or eighty feet, and then lift their heads forty or fifty feet higher. They resemble the giants of the Yosemite. The trunks are faultlessly straight and the bark is deeply veined. There are about 30,000 trees on this avenue, and all of them were planted after the foundation of the shrine, about two hundred and fifty years ago.

THE EUROPEAN DEMAND FOR COTTON.—In its financial article the *Times* says: "Messrs. Ellison & Co., of Liverpool, cotton brokers, in their annual review of the cotton trade, make a calculation based on figures and past experience, that Europe will next year require 2,241,000,000 pounds of cotton, or 5,602,500 bales. They estimate that the demand will exceed the supply by 145,000 bales. If, however, Europe continues unsettled, the demand doubtless will be less, and the probable supply may exceed the estimates, as reports from the United States frequently do not give a fair idea of the actual state of facts at the outset of the season."

BOOKS RECEIVED.

[The publisher will send any book reviewed in the *ECLECTIC*, or any other new publication, postage paid, on receipt of the price.]

German Classics for American Students. Selections from Goethe's Prose. Edited, with Notes, by JAMES MORGAN HART. New-York: G. P. Putnam's Sons. 16mo, cloth, pp. 199. Price, \$1.

The Big Brother Series. Captain Sam; or, The Boy Scouts of 1814. By GEORGE CARY EGGLESTON. New-York: G. P. Putnam's Sons. 12mo, cloth, illustrated, pp. 212. Price, \$1.50.

Boys of Other Countries. Stories for American Boys. By BAYARD TAYLOR. New-York: G. P. Putnam's Sons. 12mo, cloth, illustrated, pp. 164. Price, \$1.50.

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